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THE ARCHAEOLOGY OF THE IBERIAN PENINSULA

From the Paleolithic to the Bronze Age

KATINA T. LILLIOS



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THE ARCHAEOLOGY OF THE IBERIAN PENINSULA

In this book, Katina T. Lillios provides an up-to-date synthesis of the rich histories of the peoples who lived on the Iberian Peninsula between 1,400,000 (the Paleolithic) and 3,500 years ago (the Bronze Age) as revealed in their art, burials, tools, and monuments. She highlights the exciting new discoveries on the peninsula, including the evidence for some of the earliest hominins in Europe, Neanderthal art, interbreeding between Neanderthals and modern humans, and relationships to peoples living in North Africa, the Mediterranean, and Western Europe. This is the first book to relate the ancient history of the peninsula to broader debates in anthropology and archaeology. Amply illustrated and written in an accessible style, it will be of interest to archaeologists and students of prehistoric Spain and Portugal.

Katina T. Lillios is Professor of Anthropology at the University of Iowa. The recipient of grants and fellowships from the National Science Foundation, the National Endowment for the Humanities, and the Wenner-Gren Foundation, she is the author of numerous books on Iberian archaeology, including *Heraldry for the Dead: The Engraved Stone Plaques of Neolithic Iberia*.

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KATINA T. LILLIOS

The University of Iowa



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PREFACE

One could say that this chronicle of one million years began with a glass of scotch. It was a Friday afternoon in the fall of 1981, my senior year at Boston University, and I was enjoying the company of fellow archaeology students and professors at the campus hangout, the Pub. Our chair, James Wiseman, was sharing news of his upcoming trip to Lisbon and plans for a new field school in northern Portugal that was to be directed by my advisor, Karl Petruso, the following summer. Not having plans after graduation other than participating in the field school, and possibly emboldened by the scotch, I asked Jim whether he could get me a job at the National Museum of Archaeology in Lisbon, then under the direction of Francisco Alves. Jim said he would try, and, a few weeks later, he informed me that I had a six-month position at the museum.

That first trip to Portugal, and particularly those six months at the museum, were tough. My Portuguese was ragged, I was lonely, and the museum was in the process of reorganization, so things were often chaotic. The museum was also cold. It had no central heating, and the winter rains produced a chill that penetrated the building's stone walls and all the layers of sweaters I was wearing. However, I had a lot of free time and spent much of it in the museum's library. Although my spoken Portuguese was poor, I could read Portuguese and Spanish well enough. In the library, I came across works that spoke of "colonial" connections between the Iberian Peninsula and eastern Mediterranean during the Copper and Bronze Ages (third and second millennia BCE). Having taken courses in the archaeology of the Aegean, the Near East, and Anatolia at Boston University, but knowing little about the western Mediterranean, I was intrigued by these accounts of far-flung travelers. The problem, I later learned, was that they were wrong. But it didn't matter. I wanted to know more, so I pursued graduate studies at Yale University, under the steady supervision of Andrew Moore and the guidance of Antonio Gilman, and wrote my dissertation on the Copper to Bronze Age transition in Portugal. Since then, I have devoted my career to the archaeology of the later

prehistory of the Iberian Peninsula through fieldwork, studies of museum collections, and analyses of large data sets.

Many of my Iberianist colleagues, however, worked in other time periods, and, over the years, they generously gave me reprints and books they had written. But, there never seemed to be enough time to read their work, although, in teaching a class at the University of Iowa on the archaeology of the Iberian Peninsula, I was able to take periodic ventures outside my areas of specialization. In 2014, I was kindly invited to present a paper summarizing recent research on late prehistoric Iberia for the *Archaeology of Iberia: State of the Field* conference at the Joukowsky Institute at Brown University. It was in preparing this paper, and confronting the difficulty of synthesizing a vast body of research, that the idea of writing a survey of Iberian archaeology came to mind as a serious idea, although, over the years, Norm Yoffee had encouraged me to write such a book for the Cambridge World Archaeology series. Such a book would be a much-needed resource, especially given the explosion of research in Spain and Portugal since the 1970s. Since the publication in 1968 of Hubert Savory's *Spain and Portugal: The Prehistory of the Iberian Peninsula*, there was nothing available for the Anglophone reader that brought together the rich archaeological record for both Portugal and Spain.

This book is also an expression of gratitude to all those archaeologists who spoke to me in that cold museum in 1982, who have invited me to lunch or dinner or opened up their homes to me, introduced me to other archaeologists, taken me on site visits, supported me and challenged me, and answered my myriad of questions for over nearly four decades. Many are now my dearest friends. Sadly, a few are no longer walking this earth.

In acknowledging my debts, I first wish to note that much of this book was written while on a National Endowment for the Humanities fellowship during the 2017–18 academic year. Without this time to focus exclusively on this project, it surely would have taken many more years to complete. I also received financial support from the University of Iowa Office of International Programs, Department of Anthropology, and Office of the Vice President for Research. The staff of the German Archaeological Institute in Madrid, particularly Dirce Marzoli, Michael Kunst, and Thomas Schattner, made me feel at home during my numerous research stays. Annemarie Pearson helped to prepare the bibliography. Antonio Blanco-González, Angela Collins, Jacqueline O'Neill, and Rasmus Schlütter helped to prepare the maps.

I am enormously grateful to my friends and colleagues who made the task of chronicling one million years of history such a satisfying one. They responded to my email queries and read drafts, sometimes multiple times. They provided photographs that I could use in the book. They joined me on field trips to visit sites. To be part of such a community is a privilege beyond measure. I especially wish to express my gratitude to Ana Cristina Araújo, Ana Cristina Martins, Antonio Blanco-González, Antonio Gilman, João Carlos

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I am immensely grateful for the professional, supportive, and patient staff at Cambridge University Press, including Beatrice Rehl, Norm Yoffee, Ishwarya Mathavan, Mark Fox, and Abigail Neale. Philippa Jevons meticulously produced the index.

Finally, I wish to thank my family – my husband Morten Schlütter – and our son, Rasmus. They have been part of this journey, shared many of my joys and struggles, and encouraged me throughout it. Our cats Jack (2008–18), Clio, and Leo have done their best to remind me what is important in this short life.

CHAPTER I

SETTING THE STAGE: THE HISTORY OF IBERIAN ARCHAEOLOGY AND GEOGRAPHY OF THE IBERIAN PENINSULA

Fortunately, a chance discovery has increased my legitimate satisfaction at being able to bring to light the discoveries of the esteemed Cárdenas and Mr. Fernandez-Guerra. This revelation is mine alone – it does justice to Cárdenas’s drawings – and grants me the honor of being the first person in Spain to introduce an entirely new and heretofore unknown piece of prehistoric writing.

Don Manuel de Góngora y Martínez (1822–1884) on the discovery of
Levantine-style art at Cueva de los Letreros¹

I discovered, discovered as people discover these things, having the eye oriented in a particular way. In addition, I have an enormous network of collaborators. These collaborators are the hunters, the rural guards, the herders. They are the people with whom I work.

Henrique Leonor Pina (1930–2018) on his discoveries of menhirs and cromlechs
of the Portuguese Alentejo²

One night, I was checking, of course, the soccer results from the Portuguese league, to see how “my” team was doing. Not well. They had just lost 6–3 to their main rival, a game that would be made into history books of the sport in Portugal. But what caught my attention that night was a small post. Stating something like – “200 meters of Palaeolithic engravings to be flooded by the dam at Foz Côa.” There were a couple of other posts by people who were concerned with the situation. My mouth opened wide in disbelief. If this was true, it was a revolutionary discovery. Not a lot of open air sites with Palaeolithic rock art were known in Europe, and Portugal was usually regarded as the westernmost area where Palaeolithic rock art was present, but in only a couple of places . . . And threatened by a dam? Shit.

Francisco Almeida (personal communication, 2018)

Look, father, oxen!

María Sanz de Sautuola (1871–1946), upon seeing the painted
bison in Altamira in 1879³

INTRODUCTION

For over 100 years, archaeological discoveries in Spain and Portugal have revolutionized our thinking about human cultural and biological history. Sites in the Guardix-Baza Basin and Atapuerca Range in Spain demonstrate that Europe was inhabited far earlier than previously imagined, more than one million years before painters took pigment to the walls of Altamira. The Lapedo child, who was buried in a rock-shelter in central Portugal and died 24,000 years ago, stimulated new thinking on the possibility of Neanderthal and modern human interbreeding. We recognize that modern humans not only painted in secluded caves, like Altamira, but also along open-air cliff faces, such as the Côa Valley of Portugal. In an astonishing development, recently dated art in Spanish caves strongly suggests that Neanderthals also produced art. The archaeological heritage of the Iberian Peninsula provides many examples of evolutionary firsts but also insights into creativity, resilience, environmental degradation, competition, cross-cultural exchanges, and violent conflicts.

This book brings together what we currently know about the lives and histories of the ancient people who lived in Portugal and Spain. It begins at the beginning. That is, the story begins with the first peoples who arrived to the peninsula around one million years ago. It ends in the mid-second millennium BCE, when the peninsula became incorporated into the Atlantic and Mediterranean world systems. In culture historical terms, it spans the Paleolithic, Mesolithic, Neolithic, Copper Age, and Early Bronze Age.

Archaeologists now recognize that many sites were revisited or reoccupied repeatedly over long periods of time and had enduring biographies. This book takes these histories into account. That is to say, megaliths are not only a Neolithic phenomenon; some were also used as burials in the Bronze Age, Iron Age, Roman period, or Middle Ages.⁴ A few were converted into Christian chapels, such as the dolmen-chapel of São Dinis in Pavia, Portugal (Figure 1.1). Large caves were particularly amenable to enduring histories. Escoural, in the Portuguese Alentejo, had cave art dated to the Upper Paleolithic and was later used as a mortuary cave during the Neolithic. After the entrance was closed off, groups during the third millennium BCE (the Copper Age) established a settlement and built a tomb next to the cave.⁵ The cave of El Mirón in Cantabrian Spain was used over tens of thousands of years, from the Late Mousterian through the Early Bronze Age, during the Middle Ages, and up to the time of excavations as a shelter for humans and their herds.⁶ Similarly, ancient objects were sometimes circulated and heirloomed after their initial manufacture. Some engraved slate plaques, which were created during the Late Neolithic/Copper Age ca. 3,000 BCE, were broken and made into pendants, and others were later engraved – at an unknown time – with images of people or fish.⁷ Neolithic stone axes were often recovered by later peoples and used as talismans. For example, archaeologists found axes at the



Figure 1.1 Anta/chapel of São Dinis in Pavia (Évora, Portugal).

Photo: Courtesy Cornelius Holtorf, 2001

Iberian sites of Ullastret and Ampurias in Spain and at the Iron Age site of Citânia de Briteiros in Portugal, interpreting them as amulets of Iron Age peoples.⁸ Romans also used Neolithic axes to protect their homes, as at Conimbriga in Portugal. This practice lasted into the nineteenth century with the belief that these axes, known as *pedras de raio* in Portuguese, could give good luck or protect homes against thunderstorms when placed on the roof or inside the house.⁹ These examples of reuse or reoccupation of places and the circulation of objects reveal the importance of the past for ancient peoples.¹⁰ Archaeological accounts that neglect these afterlives are not only incomplete, they marginalize or privilege the histories of particular peoples. The creation of selective histories of ancient monuments and the ways they can serve as symbolic capital in shaping national identity have been eloquently explored by Yannis Hamilakis in his discussions of the Parthenon marbles.¹¹

Geographically, this book synthesizes and summarizes the archaeological past of continental Portugal and Spain, including the Balearic Islands. Given that the mosaic of current geopolitical boundaries and national administrative provinces do not correspond to ancient territories (Figure 1.2), the cultural regions most relevant for the time period under consideration will be used to organize information. Furthermore, the peninsula was never isolated. Throughout its long history, people have journeyed with goods and ideas between the African continent and Iberia, along the Mediterranean coast to and from Iberia, and northward along the Atlantic coast toward western France and the British Isles. This book also considers these interactions, as have scholars working in more recent time periods.¹²

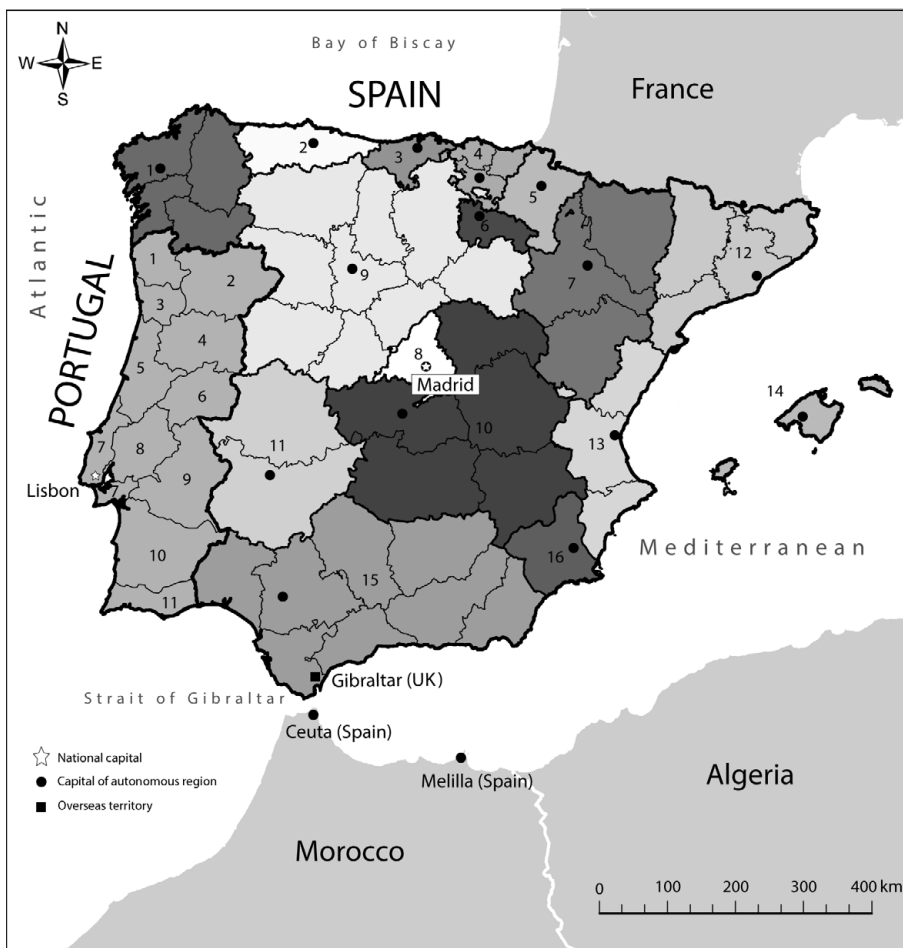


Figure 1.2 Administrative regions of Portugal and Spain. Portuguese provinces: 1. Minho; 2. Trás-os-Montes e Alto Douro; 3. Douro Litoral; 4. Beira Alta; 5. Beira Litoral; 6. Beira Baixa; 7. Estremadura; 8. Ribatejo; 9. Alto Alentejo; 10. Baixo Alentejo; 11. Algarve. Spanish autonomous communities (with capital): 1. Galicia (Santiago de Compostela); 2. Asturias (Oviedo); 3. Cantabria (Santander); 4. País Vasco (Vitoria-Gasteiz); 5. Navarra (Pamplona); 6. La Rioja (Logroño); 7. Aragón (Zaragoza); 8. C. Madrid (Madrid); 9. Castilla y León (Valladolid); 10. Castilla-La Mancha (Toledo); 11. Extremadura (Mérida); 12. Catalunya (Barcelona); 13. C. Valenciana (Valencia); 14. I. Balears (Palma); 15. Andalucía (Sevilla); 16. R. Murcia (Murcia). Map: Drawing from Angela Collins and Rasmus P.L. Schlütter

In addition to examining the archaeological evidence, this book evaluates the factors that shaped the creation of this evidence. One factor is the environment. The distinctive qualities of the Iberian landscape – its richness in metal ores and rock types, diverse climates and topographies, coastal resources, riverways that created corridors of connectivity, and proximity to another continent – structured the lives and histories of ancient peoples. The environment constrained and shaped opportunities for agriculture, trade,

communication, defense, travel, production, and community-building. The peninsular configuration of Iberia, surrounded by water on three borders and mountains along its fourth, created (and creates) some degree of coherence out of its regional diversity. It is perhaps because of the tensions between its geographic coherence, regional diversity, and enduring cross-cultural interactions that indigeneity and exogeneity are meta-themes of Iberian archaeological research. The colonial histories of Portugal and Spain have also played a role in shaping understandings of cultural novelty, identity, and mobility in the ancient past.

Environmental factors not only shaped the lives of ancient peoples, they structured what of the past is preserved. Within the large expanses of limestone bedrock in Iberia are many caves and rock-shelters, where ancient peoples sheltered themselves and their animals and where they buried their dead. They also tend to provide excellent conditions for the preservation of human and animal bones. The arid caves of southern Spain have been particularly favorable for the preservation of organic remains. For example, at Cueva de los Murciélagos, sandals, bags, and tunics made 7,000 years ago were preserved.¹³ In contrast, the acidic soils of western Iberia, where megalithic burial sites are primarily found, have destroyed or significantly damaged the bones found in them, challenging archaeologists in their understanding of the human (and animal) populations with which they were associated, and, as a consequence, in dating them.

However, archaeology is not only the product of what happened in the past, shaped by environmental and preservational factors. It is an outcome of social practices structured by history. The histories of Portugal and Spain as territories of Al-Andalus (711–1492 CE) and as colonizers of the Americas, Africa, and Asia, their extra-centrality with respect to Northern European hegemony, and the dictatorships experienced in both nations until the 1970s have contributed to similarities in archaeological discourses and practices and in their reception by archaeologists from other countries.¹⁴ For example, the peripheral position of Spain and Portugal meant that some discoveries of Paleolithic art, such as at Altamira in the nineteenth century¹⁵ and the Côa Valley in the twentieth century,¹⁶ were initially thought to be fakes or recent works.

Yet, archaeology in Portugal and Spain have evolved differently given the hundreds of years during which the countries have had stable territorial borders, established between the thirteenth and fifteenth centuries. Díaz-Andreu García has argued that Spain's earlier and more developed industrialization led to an earlier emergence of a middle class that supported and promoted the study of history.¹⁷ Spain's greater proximity to France and the European continent facilitated closer ties to international scholars than Portugal. Further differentiation occurred after the late 1980s, when the autonomous governments of Spain undertook the management of archaeological

investigations. This precipitated a growth of regional cultural heritage entities and an increasingly fragmented (and bureaucratic) institutional landscape in Spain, in which significant differences exist between autonomous regions in terms of local policies, funding support, and infrastructure.¹⁸ Another factor contributing to the fragmentation of Iberian archaeology is language. The archaeological literature has been published in Portuguese, Castilian, Catalan, Galego (Galician), and Basque, as well as French, English, and German. National differences also play out in citation practices. Until the mid-1990s, archaeologists in Spain and Portugal tended to cite scholars from their own country.¹⁹ When referring to the other's work, Portuguese authors cited the work of Spaniards more often than Spanish authors cited the work of Portuguese. Thus, even though both countries share important elements of history and rivers crosscut their borders, different archaeological practices have evolved and shape what is known about the Iberian prehistoric past and how it is interpreted.

One consequence of the compartmentalization of research and heritage management and the explosion of archaeological research in Iberia since the 1980s is that peninsular syntheses are rare, and those that exist are out-of-date.²⁰ Two exceptions are *Prehistoria de la Península Ibérica (The Prehistory of the Iberian Peninsula)*²¹ and *Iberia: Protohistory of the Far West of Europe*,²² although they emphasize the Spanish record. Syntheses exist for each country. For Portugal, there are *Portugal pré-histórico: seu enquadramento no Mediterrâneo (Prehistoric Portugal: Its Context in the Mediterranean)*²³ and *Pré-História de Portugal (The Prehistory of Portugal)*.²⁴ For Spain, there are *Historia de España (The History of Spain)*,²⁵ *Prehistoria de España: Los orígenes (The Prehistory of Spain: Origins)*,²⁶ and *Prehistoria antigua de la Península Ibérica (Early Prehistory of the Iberian Peninsula)* and *Prehistoria reciente de la Península Ibérica (Later Prehistory of the Iberian Peninsula)*.²⁷ Other synthetic works focus on specific time periods, such as early prehistory,²⁸ later prehistory,²⁹ or protohistory.³⁰ Some works have synthesized findings on topical themes, such as Bell Beakers³¹ or social complexity.³² Thus, no comprehensive and up-to-date book has been available since the publication of Savory's *Spain and Portugal* in 1968 that brings together the archaeology of prehistoric Iberia from the Paleolithic through the Bronze Age for interested students, scholars, or tourists, particularly those of the Anglophone world. This book aims to fill this gap.

GEOGRAPHY

The Iberian Peninsula can be seen as a miniature continent.³³ With the lofty ranges and peaks of the Cantabrian Mountains and Pyrenees, the scorching desert of Almería, the fertile valley of the Guadalquivir River, and the cool moist winds of the Atlantic coast, the peninsula offered an array of opportunities and challenges to ancient peoples (Figure 1.3a–d). The peninsula

(a)



(b)



Figure 1.3 Landscapes of the Iberian Peninsula: (a) Cantabria (on the road to Ruesga); (b) Meseta; (c) Andalucia (view from El Torcal de Antequera, Málaga); (d) northwest Iberia (Island of Sálvora, off the Galician coast).

Photo: (a) Katina Lillios, 2016; (b) Courtesy of Elvira S. Uzabal (CC BY-SA 2.0, <https://commons.wikimedia.org/w/index.php?curid=38478363>); (c) Katina Lillios, 2017; (d) Courtesy of Paula Mota Santos

enjoys an extensive coastline with harbors and estuaries, teeming with birds, fish, and shellfish. It straddles two large bodies of water – the Atlantic and the Mediterranean – with distinctive climates. It faces another continent, Africa. Its mountains and rivers are rich in metal ores. It is bisected by extensive river systems, many with fertile valley soils. These intrinsic features played an important role in structuring cultural interactions and histories. These features are not static, however, and significant environmental changes have taken

(c)



(d)



Figure 1.3 (*cont.*)

place between the Late Pleistocene and through the Holocene. These changes are covered in individual chapters.

The Iberian Peninsula is the westernmost (and third largest) peninsula in Europe, covering an area of approximately 582,000 km² (225,000 sq mi). It is surrounded by the Atlantic Ocean to the north and west, and the Mediterranean Sea to the south and east. It is separated from the rest of the European continent by the Pyrenees, and from the African continent by the Strait of Gibraltar, which is 14 km wide at its narrowest (Figure 1.4). These geographic barriers, although



Figure 1.4 Iberian Peninsula, by satellite.

Photo: Courtesy of Jacques Descloitres, MODIS Land Rapid Response Team, NASA/GSFC

not impenetrable ones, have contributed to creating distinctive material practices in its ancient populations. In recent times, the identity of Iberian peoples and their differences from other Europeans have been the subject of creative explorations. One of the most imaginative is José Saramago's novel *The Stone Raft* (*A jangada de pedra*).³⁴ In the book, the Iberian Peninsula mysteriously undergoes a powerful geological event near the Pyrenees, separating it from the rest of Europe and sending it slowly floating southward into the Atlantic Ocean toward Africa and South America. The peninsula's southward drift provided Saramago, through the characters in the novel, an opportunity to explore the subaltern position of Portugal and Spain vis-à-vis their European neighbors to the north and their ambivalent relationship to their former colonies to the south.³⁵ Not coincidentally, the book was published (in Portuguese) in 1986, the year Portugal and Spain joined the European Union (EU).

However culturally distinctive the Iberian Peninsula may be viewed, its geographic heterogeneity and biodiversity are high: "Although its area is <6% of western Europe, the Iberian Peninsula harbors as much as 50% of the European plant and terrestrial vertebrate species."³⁶ One reason for its high biodiversity is that it was relatively ice-free during the Pleistocene and served as a refugium for animal and plant life from more northerly glaciated parts of Europe. There are, however, a number of ways that the internal variability of the peninsula can be framed (geological, topographic, climatic, etc.), and it is

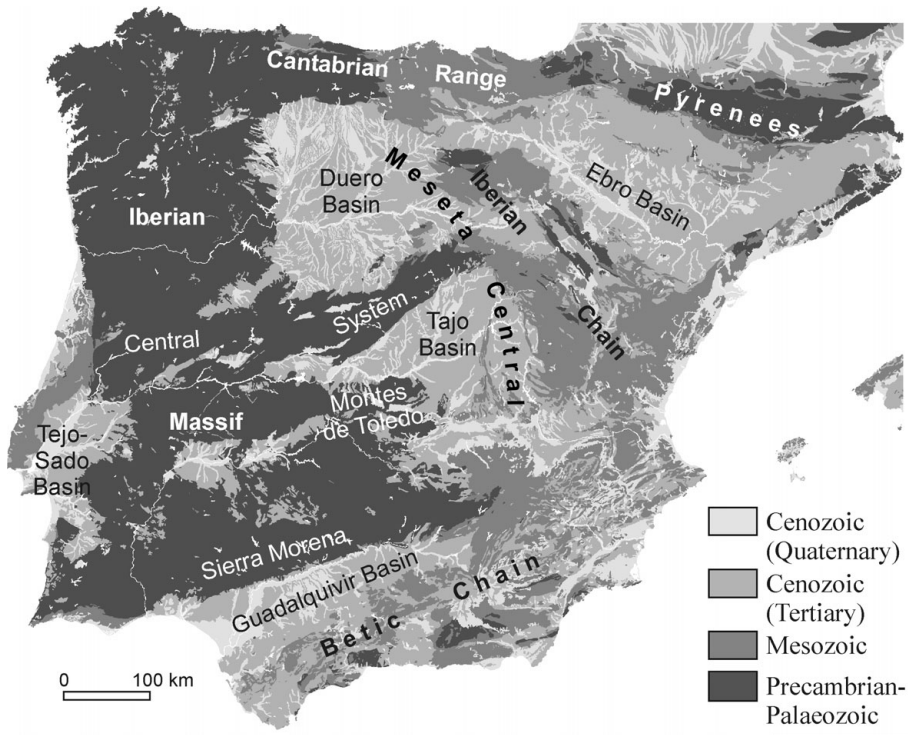


Figure 1.5 Geological regions of the Iberian Peninsula.

Adapted: Benito-Calvo *et al.* 2009, fig. 1

likely that the role of these different environmental qualities changed over time, depending on the economic and social lives of the human groups.

One factor contributing to the geographic heterogeneity of the Iberian Peninsula is its tectonic history, which began when the Eurasian and African tectonic plates collided and joined the Mesomediterranean plates.³⁷ Five major geological regions have been defined, each with distinctive classes of rocks and minerals (Figure 1.5).

- (1) The Iberian Massif: Located on the western half of the peninsula and includes the Central System (*Sistema Central*) and Sierra Morena. It is associated with igneous and metamorphic rocks (such as amphibolites) dating from the Precambrian-Paleozoic that were formed during the Variscan/Hercynian Orogeny when the supercontinents Laurasia and Gondwanaland collided, between 370 and 290 mya. The Iberian Pyrite Belt, with its many metal ores, is part of the Iberian Massif.
- (2) The Pyrenees and Cantabrian Mountains: These mountains were formed through the collision between the Iberian and European plates. They comprise diverse geologies, including limestone and marls. During the Last Glacial (and earlier glacials), there were continuous glaciers along the Pyrenees from the west to the east, with narrow corridors at the Atlantic and Mediterranean ends.

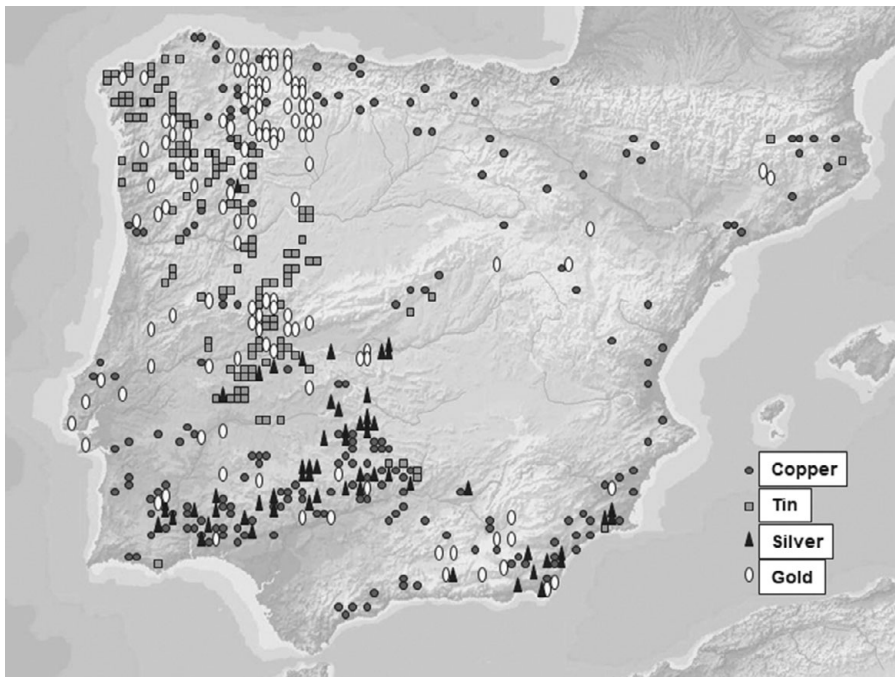


Figure 1.6 Metal ores of the Iberian Peninsula.

From: Bartelheim 2007, fig. II.7

- (3) The Betic System: Located in southeast Iberia, was the result of the convergence of Iberian and African plates. Metamorphic and igneous rocks are found in this zone.
- (4) The Iberian System and Catalanian Coastal Range: Formed during the Cenozoic Alpine orogeny.
- (5) Cenozoic Basins: These include the basins of the Douro, Tejo, Ebro, and Guadalquivir, and those in the Betic and Iberian Ranges, and Pyrenees.

There are a few ancient (Neogene) volcanoes on the eastern Mediterranean side of the peninsula.

The diverse stones and metal ores available provided ancient peoples a wealth of raw materials from which to make personal adornments, tools, and building materials, as well as goods to trade. The peninsula is particularly rich in metal ores, including copper, gold, silver, and tin (Figure 1.6). The presence of these metals (plus lead) was one of the primary reasons the Phoenicians, Carthaginians, Greeks, and Romans colonized or set up outposts on the peninsula.³⁸ The Iberian Pyrite Belt, located in the South Portuguese Zone and extending 240 km through southwest Iberia, is an important source for all these metals.³⁹ Copper ores (often with arsenic) are known in southwestern and southeastern Iberia,⁴⁰ in the northwest,⁴¹ and in the Basque zone.⁴² Northwest Iberia is also rich in tin ores, specifically cassiterite.⁴³ Gold is found

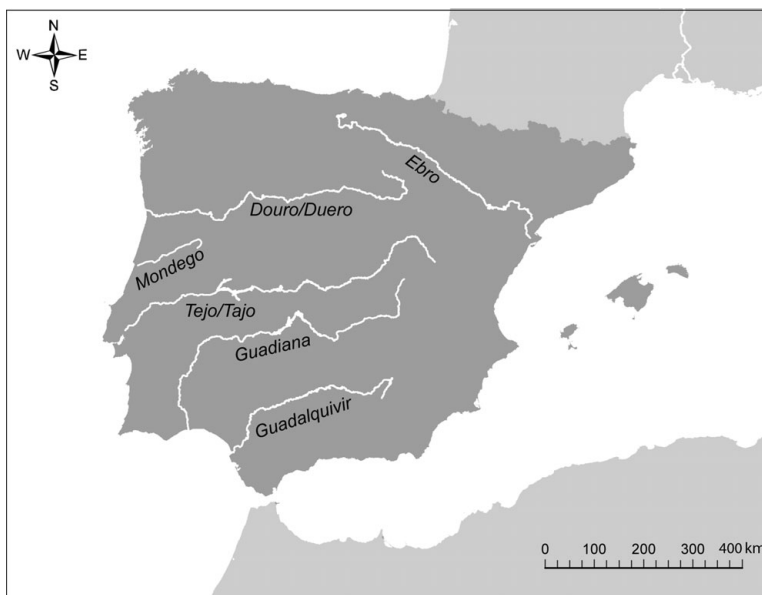


Figure 1.7 Rivers of the Iberian Peninsula.

Drawing: Angela Collins and Rasmus P. L. Schlütter

in the southwest in the Ossa Morena and South Portuguese Zones⁴⁴ and the northwest.⁴⁵ Silver is primarily found in southern Iberia along the Iberian Pyrite Belt.⁴⁶

The north–south collisions that created the peninsula also formed a series of mainly east–west mountain ranges and rivers and east–west corridors of communication and trade, many of which cut through the modern political boundaries of Portugal and Spain. It is, in part, due to these riverways that a truly distinctive Portuguese or Spanish prehistoric past does not exist. These rivers include the Douro/Duero, Mondego, Tejo/Tago (Tagus), Ebro, and Guadalquivir (Figure 1.7). The principal north–south river is the Guadiana. All provided corridors of communication between the interior and the coasts.

The peninsula is divided into two biogeographical regions: The Eurosiberian and the Mediterranean (Figure 1.8). The Eurosiberian region extends over northern and western Iberia. It is cool and wet, with abundant rainfall reaching between 1,000 and 2,000 mm/year, and it supports a deciduous forest cover. The northwest coast, with its rich nutrient-bearing currents and estuaries, has long been a focus for fishing and shellfish gathering. The Mediterranean region, which includes the interior, southern, and eastern zones (including the Balearics), experiences warmer and drier summers and relatively cool and wet winters, with rainfall between 350 and 800 mm/year. There, natural forests have largely disappeared and been replaced by agricultural fields, vineyards, olive groves, and scrubland.⁴⁷ The southeast is currently a semidesert and the most arid region of Europe, with less than 300 mm/year of precipitation.

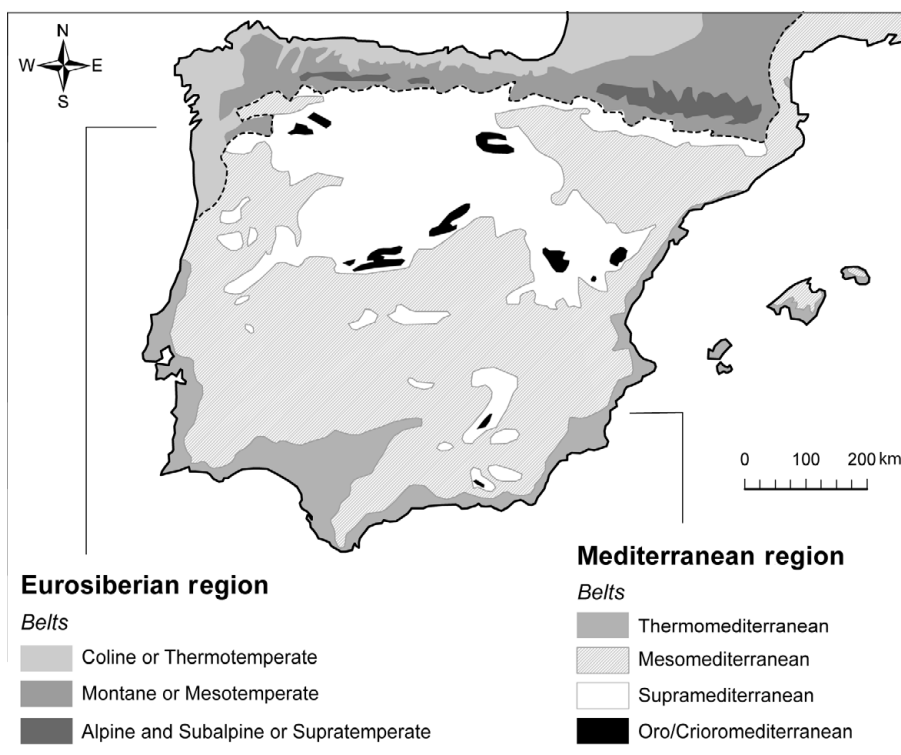


Figure 1.8 Biogeographic zones of the Iberian Peninsula.

Drawing: Angela Collins and Rasmus P. L. Schlütter, adapted from Carrión *et al.* 2010, fig. 1

There, soil erosion and other degradation processes that began in later prehistory have left barren, lunar-like badlands.⁴⁸ The resemblance of the Iberian southeast to the American Southwest and deserts of the Middle East made the region a popular film location in the 1960s and 1970s, particularly for “Spaghetti Westerns.”

Another important geographic division, closely entwined with cultural constructions of space (including infrastructures of transportation and communications), is that between coastal and interior Iberia. Today, the population of Spain and Portugal is largely concentrated along the coasts, with the exception of Madrid, and this demographic reality is accompanied by the popular notion that the interior is more traditional than the coast, with its cosmopolitan cities.⁴⁹ Thus, demarcating the border between the coast and interior for the ancient past is not a straightforward task.⁵⁰ Nonetheless, archaeologists tend to agree that the interior is primarily made up of the Meseta, which is the largest geographic unit of the peninsula, covering a third of its area.⁵¹ The Central System divides the Meseta into a north/west zone and a south/east zone (La Mancha plain). The Meseta experiences a continental climate, with marked contrasts between the summers (hot and dry: 24°C mean) and winters (cool

and wet: 4 °C mean). The highlands experience higher levels of rainfall (over 1,000 mm/year) than the basins of the Duero and Tagus (ca. 500 mm/year), which cut through the plateau.

The rivers of the peninsula provide, at least in sections, broad valleys with fertile soils. The rivers with the largest catchment areas and mean annual discharge, from largest to smallest, are the Duero, Ebro, Tagus, Guadiana, and Guadalquivir.⁵² However, wet and dry years triggered by the North Atlantic Oscillation can cause significant disparities in the flow of Iberian rivers, particularly those in the south.⁵³ Recent climatological studies have recorded differences varying by a factor of 3 between wet and dry years. Irrigation plays a major role today in increasing agricultural productivity, particularly in southern Iberia. In 2016, irrigated fields made up about 15 percent of the cultivated fields in Spain, although the crops grown in these fields made up 60 percent of the total value of agricultural production.⁵⁴ When irrigation and other water management practices first appear in Iberia is debated, although botanical and archaeological evidence suggest that such practices may have been in place in some areas of southeastern Iberia and the Meseta by the third and second millennia BCE.⁵⁵

HISTORIES OF ARCHAEOLOGY IN THE IBERIAN PENINSULA

The peninsula's human histories, particularly the histories of the Portuguese and Spanish nations, have also played a role in shaping the landscape and in how archaeologists have interpreted its past.

In the nineteenth century, archaeologists sympathetic to the ideals of pan-Iberian nationalism, an ideology that gained some popularity following the unification of Italy and Germany in 1870 and 1871, respectively, emphasized the geographic unity of the peninsula. They included Augusto Filipe Simões (1835–1884), who wrote the first textbook on the archaeology of the peninsula, entitled *Introdução á archeologia de Peninsula Ibérica (Introduction to the Archaeology of the Iberian Peninsula)*.⁵⁶ In 1892, Spanish prehistorians Juan Vilanova y Piera (1821–1893) and Juan de Dios de la Rada y Delgado (1827–1901) noted that Spain and Portugal were:

territories which, whilst they unfortunately constitute two politically separate nationalities, in terms of their primitive history should form a single unit, as no natural boundary separates them, and as has been said, both their geological structure and the peoples who since ancient time have inhabited them are the same.⁵⁷

Given, however, that the territorial borders of Portugal and Spain were stabilized since the end of the Reconquista, between the thirteenth and fifteenth centuries, distinctive histories and distinctive archaeologies developed.

Spain: Antiquarianism and the Foundations of Spanish Archaeology

Interest in the ancient past of the Spanish territory preceded the creation of the Spanish nation-state in the early eighteenth century.⁵⁸ For example, a kind of pre-nationalist archaeology emerged in the late fifteenth century following the marriage of King Ferdinand II of Aragon and Queen Isabella I of Castile.⁵⁹ The two monarchs governed together although their realms were administered separately. At the time, archaeological or antiquarian pursuits were largely conducted by members of the monarchy, aristocracy, and clergy and focused on those monuments linked to the Greco-Roman world. One notable figure was Elio Antonio de Nebrija (1441–1522), a Biblical scholar and grammarian, who was designated the first royal chronicler in 1490.⁶⁰ Nebrija studied the ancient monuments of the Spanish territory, particularly Roman sites, such as Mérida, as they not only demonstrated the glory of its past but legitimated the unification of the Spanish kingdoms. In 1738, the Real Academia de la Historia was founded, which controlled the study of antiquities. The first law protecting cultural heritage was enacted in 1803 with the Royal Patent of the Court of Charles IV.⁶¹

The dissolution of the religious orders in 1833 triggered the distribution of works of art and antiquities – largely of the Classical world – that were in the possession of the clergy and their relocation to museums and archives. This marked a turning point in the management and construction of the national past. In 1844, the Comisiones de Monumentos Históricos y Artísticos (Commissions of Historic and Artistic Monuments) was created; its responsibilities included the protection of noteworthy architecture and archaeology. In many ways, Spain was culturally dependent on France in the nineteenth century, with the development of scholarly institutions and associations, research, monument commissions, and the National Museum following closely in time and form to those in France. The Museo Arqueológico Nacional (The National Archaeological Museum) was founded by Royal Decree of Isabella II in 1867. Its first director was Pedro Felipe Monlau y Roca (1808–1871), a physician (considered one of the fathers of “natural hygiene” or epidemiology) and a scholar of Greek, political economy, and business administration. The museum’s first location was in the Casino de la Reina, a country home given to Queen Maria Isabel of Portugal by the city of Madrid in 1817. It was moved to its present home in the Palacio de Biblioteca y Museos Nacionales (Palace of the National Library and Museums), whose opening was inaugurated in 1892 on the 400th anniversary of the “Discovery of America.”⁶² Professionalization occurred through the creation in 1856 of the Escuela de Diplomática (School of Diplomacy), a higher education institution that educated archivists, librarians, and museum curators, which taught archaeology. Professionalization was reinforced with the integration of antiquarians in an organization that in 1868 was known as the Corps of Professional Archivists, Librarians, and

Antiquarians.⁶³ This professional body contributed to the creation of a bourgeois class of museum professionals. The first journals followed, including the *Revista de Bellas Artes e Histórico-Arqueológica* (*Journal of Fine Arts and History-Archaeology*) (published 1866–1888) and later the *Revista de Archivos, Bibliotecas y Museos* (*Journal of Archives, Libraries, and Museums*) (1871). In 1868, Góngora published *Las antigüedades prehistóricas de Andalucía* (*Prehistoric Antiquities of Andalucía*), one of the earliest accounts of prehistoric Spain. Góngora offered the first archaeological model for the “origins” of the Spanish nation, which was argued to be the result of Iberians and later Celtic invasions.⁶⁴

Due, in part, to Spain’s “underdevelopment” and romantic associations, foreign scientists, scholars, and artists came to Spain, some of whom played an important role in the discovery and interpretation of prehistoric sites. They included Belgian mining engineers Louis Siret (1860–1934) and his brother Henri Siret (1857–1933), and Frenchmen Émile Cartailhac (1845–1921) and Pierre Paris (1859–1931). These learned individuals published synthetic volumes in their own languages, created their own journals (such as the *Bulletin de la Société franco-ibérique* [*Bulletin of the Franco-Iberian Society*], in 1879), and, in general, “fostered the image of Iberian archaeology as virgin and unexplored territory which they alone were beginning to chart.”⁶⁵

Archaeology in Spain was institutionalized in the first thirty years of the twentieth century.⁶⁶ This was also a time when international networks, which extended over much of Europe, including France and the UK, came to be created.⁶⁷ Relationships were cultivated between Spanish and German archaeologists, as Germany had intellectual prestige at the time.⁶⁸ Spaniards studied in Germany, and Germans came to work in Spain. One mechanism by which Spaniards studied abroad was the Junta para la Ampliación de Estudios e Investigaciones Científicas (Committee for the Development of Scientific Studies and Investigations), which supported research overseas between 1907 and 1939. Pedro Bosch-Gimpera (1891–1974), a Catalan philologist-turned-archaeologist, was one recipient of funding. Bosch-Gimpera enjoyed research stays in Berlin between 1911 and 1914, when he studied Greek vases, Greek religion, and the prehistoric archaeology of Europe. Through this exchange, many ideas and methods from German archaeology were brought to Spain. For example, Bosch-Gimpera took a class with German linguist and archaeologist Gustaf Kossinna (1858–1931), who inspired him to develop a culture historical approach to the Spanish past. Specifically, Bosch-Gimpera argued in *Etnología de la Península Ibérica* (*Ethnology of the Iberian Peninsula*)⁶⁹ that Spain was an amalgamation of different ethnic groups, with their roots in prehistory. His students, including Luis Pericot García (1899–1978), Alberto del Castillo (1899–1976), and Josep de Calassanç Serra i Ràfols (1900–1971), would become professors of archaeology before and after the Civil War. Germans also came to Spain to study and work as archaeologists. One of the most prominent was Hugo Obermaier (1877–1946). Obermaier was a priest with knowledge of geology,

paleontology, and archaeology. He became chair of the Faculty of Philosophy and Letters at the Universidad Complutense de Madrid in 1922 and trained most of the archaeologists of the Madrid school, including Martín Almagro Basch (1911–1984) and Julio Martínez Santa-Olalla (1905–1972).

Spain: Archaeology under Franco (1936–1975)

The dictatorship of General Francisco Franco (1936–1975) and the Spanish Civil War (1936–1939) impacted the practices and management of archaeology in Spain. Following the Civil War, archaeologists whose political loyalties were not sympathetic to Franco's regime went into exile (Bosch-Gimpera) or did not return to Spain (Obermaier); others who were sympathetic were appointed to key positions. One of those whose careers were advanced at this time was Martínez Santa-Olalla, a Falangist and student of Obermaier. Martínez Santa-Olalla was appointed the General Commissar of the General Commissariat for Archaeological Excavations (Comisaría General de Excavaciones Arqueológicas-CGEA), which was created in 1939 to oversee and manage archaeological excavations.⁷⁰ His father, General Martínez Herrera, was a high-ranking military officer close to Franco. Martínez Santa-Olalla held the post until the CGEA was abolished in 1955, when it was replaced by the Servicio Nacional de Excavaciones Arqueológicas (National Service for Archaeological Excavations), which he headed for two years. He also attempted to assume, without long-term success, the Chair in Primitive History of Man at the Universidad de Madrid that had been left vacant by Obermaier.

Under Franco, archaeology became strongly centralized, with orders and funding for research directed from Madrid. The provinces did have commissars, whose unremunerated positions were compared to those of religious missionaries and heroes. The role of patronage was strong, and advancement was dependent on more senior academics.⁷¹ In 1943, the German Archaeological Institute (Deutsches Archäologisches Institut [DAI]) opened a branch office in Madrid and appointed Helmut Schlunk, a medievalist, as its first director.⁷² Yet, it closed shortly afterward and only reopened in 1954.⁷³ After 1954, the DAI initiated numerous projects, some of which involved partnerships with Iberian institutions; these included investigations at the Roman villa of Centcelles in Tarragona directed by Schlunk in consultation with J. Serra i Vilaró, Pere Batlle Huguet, and J. Sánchez Real.⁷⁴ However, the DAI recognized the importance of the prehistoric record of Iberia in ancient history, and, indeed, the Madrid department was the first DAI department to have a prehistorian appointed. This was Edward Sangmeister (1916–2016), who was posted in 1954.⁷⁵ Martín Almagro Basch played a key role in the modernization of Spanish archaeology at this time by creating new journals, such as *Ampurias* (1939) and *Trabajos de Prehistoria* (*Research in Prehistory*) (1969), founding the Instituto Español de Prehistoria del

Consejo Superior de Investigaciones Científicas (CSIC; Institute of Prehistory of the Spanish National Research Council) (1958), directing the Museo Arqueológico Nacional (1968–1981), and strengthening the study of prehistory in Spanish universities.⁷⁶

In contrast to Nazi Germany, however, archaeology did not play an important role in the creation of national myths in Spain.⁷⁷ Under Franco, the roots of the Spanish nation were seen as dating to after 1492, so prehistoric archaeology was largely irrelevant for national myth-building.⁷⁸ This does not mean that archaeologists – especially in the early years of the dictatorship – did not try to advocate for certain periods as representing a Spanish Golden Age, as did García y Bellido for the Iberian period, with the Dama de Elche representing the first Spanish lady, de Castillo for the Beaker period, and Santa-Olalla for the Atlantic Bronze Age or Celts.⁷⁹

Perhaps because of archaeology's marginality to nationalist ideologies of the time, it did not change in its theoretical orientation under the dictatorship. This continuity may also be due to the fact that there were few archaeologists, and they generally came from a similar class background as those prior to the Franco regime.⁸⁰ Culture history continued to be the dominant theoretical perspective⁸¹ and the lens by which the Spanish past was understood.⁸² The field was studied within the humanities,⁸³ in contrast to how archaeology was considered in other countries, such as the USA, where it was linked to the natural sciences and anthropology. Archaeological narratives were descriptive and devoted little consideration to the role of the environment.

As resistance to the Franco dictatorship intensified in the late 1960s and early 1970s, however, interest in Marxist approaches increased.⁸⁴ The work of V. Gordon Childe (1892–1957) gained the interest of Spanish archaeologists, although Childe's archaeological writings were largely framed within a cultural historical framework. Curiously, Childe became a close academic friend to Santa-Olalla and even recommended that Eoin MacWhite, an Irish student, do his PhD under Santa-Olalla's supervision. Childe was also on friendly, letter-writing terms with Pericot, then a professor in Barcelona. Such a friendship between an avowed Marxist archaeologist and two Spanish archaeologists, the former, once a militant member of the Falangist party, may appear difficult to reconcile. However, Díaz-Andreu García argued that the political differences of these men were subsumed by their membership in a shared "invisible college" of scientists, in which members provided favors for each other.⁸⁵ Furthermore, Childe's cultural historical descriptions were admired by the Spaniards for their accuracy. One could also argue that Childe did not directly threaten Pericot or Santa-Olalla's political or academic positions, and vice versa, and there was really little at risk in their friendships. Childe was indeed on friendly terms with many of the leading European prehistorians of the time, which, no doubt, facilitated his ability to engage in syntheses of the

archaeological record. The impact of Childe's work, as a Marxist, on Spanish (and Portuguese) archaeology has been debated. Some have argued that his works were taboo or not read.⁸⁶ However, Díaz-Andreu García has demonstrated that, following a period in which Childe's friendship served as an international "prestige token," his work was read and discussed in university classes.⁸⁷

Spain: Archaeology after Franco (1975–Present)

Following the death of Franco in 1975 and the country's transition to a democracy, profound changes occurred in Spanish archaeology. One of the most significant was the decentralization of archaeological administration. Instead of Madrid largely controlling personnel and resources, each of Spain's seventeen semiautonomous regions had their own archaeological services dedicated to the study of their cultural heritage. Cultural resource management firms also emerged, and they worked to record, study, and preserve the country's archaeological heritage in the face of increasing development, particularly after its integration into the EU in 1986.

Important changes also occurred in archaeological theory, with increasing interest in and incorporation of theoretical developments from outside Spain. However, Spain did not follow a similar pathway as the USA and Britain, and Spanish archaeology developed its own distinctive practices. Processualism, materialism/Marxism, and structuralism all found advocates in Spain,⁸⁸ and, over time, some research groups within institutions have come to be associated with particular theoretical strands. For example, Marxist approaches came to be associated with groups working at the Autonomous University of Barcelona (UAB), and others at the University of Jaén and University of Huelva. According to Vicente Lull of the UAB, "the object of study of archaeology is to propose coherent representations which, by means of validating theories through empirical support, explain the historical meaning of the nature, properties and presence of archaeological materials."⁸⁹ The Frankfurt School also found support among archaeologists, such as Juan Vicent of CSIC in Madrid. Advocates of this approach rejected the tenets of New Archaeology for being uncritical of the relationship between epistemology and prehistory.⁹⁰ They were also critical of post-processualism for promoting a conservative idealist tradition of historical particularism.

Portugal: Antiquarianism and the Institutionalization of Portuguese Archaeology

Like Spain, Portugal's history as a nation is long and complex. Like Spain, most of Portugal was part of Al-Andalus from the eighth century until the surrender of Emir Muhammed XII to Queen Isabella I of Castille in 1492. It had stable

boundaries with Spain beginning in the thirteenth century, although it lost autonomy briefly between 1580 and 1640 when it was under the Castilian crown.

Archaeology in Portugal emerged between the sixteenth and eighteenth centuries out of an interest by elite males in classical antiquities⁹¹ and as a result of the “curiosities” brought back to Portugal in overseas colonial enterprises.⁹² For promoting interest in the Portuguese past, one of the most prominent individuals was André de Resende (1498–1573), a Dominican friar, antiquarian, and historian from the town of Évora. Resende surveyed and catalogued many of the megaliths that dotted the Portuguese countryside, particularly in his native Alentejo province.⁹³ Resende’s explanations for these monuments verged on the “fantastic.” To him, as to most others of his time, the prehistoric past of Portugal was thought to have been relatively recent and could not be dated independently.

In 1720, King D. João V established the *Academia Real de Historia Portuguesa*, which was followed by the enactment of one of Europe’s oldest antiquities protection laws by Royal Decree on August 17, 1721.⁹⁴ This law protected monuments of the Phoenicians, Greeks, Romans, Goths, and Muslims, which were considered interesting for the “glory of the Portuguese Nation.”⁹⁵ Megalithic tombs were understood to be ancient Catholic altars and, thus, also considered important. Other than megaliths, however, little attention was dedicated to the protection of prehistoric sites. Important figures in the Church, such as Frei Manuel do Cenáculo (1724–1814), who became Bishop of Beja and later Archbishop of Évora, collected Roman and pre-Roman Iron Age antiquities, as well as still-life paintings.⁹⁶ Cenáculo’s collection is now housed in the *Museu Nacional Frei Manuel do Cenáculo* in Évora (formerly known as the *Museu de Évora* [Évora Museum]; Nacional Museum of Friar Manuel do Cenáculo).⁹⁷

The early nineteenth century saw the development of liberalism in Portugal and new notions of the origins of the Portuguese nation. An important turning point occurred in 1833, when, by decree of Minister of Justice Joaquim António de Aguiar, monastic orders in Portugal – as in Spain – were dissolved and their property and possessions appropriated by the State. Antiquities that had been housed in convents and monasteries were moved to archives and museums in Lisbon and Porto.⁹⁸ This event triggered a secular and more scientific interest in these remains by antiquarians, historians, and geologists, as well as the formation of archaeological societies and journals, many of which are still active today.

At this time, archaeologists attempted to seek the origins of the Portuguese nation and its people. For some, these origins could be found in the Medieval past. Alexandre Herculano (1810–1877), considered to be Portugal’s first historian, saw the creation of the Portuguese nation as an act of political will, so only monuments connected to Portugal after the Middle Ages were

important, not those from prehistory.⁹⁹ For others, however, the nation's origins were to be found in prehistory. With the aim of understanding the origins of the Portuguese people, Francisco Martins Sarmento (1833–1899) surveyed and excavated megalithic sites and Iron Age castros in northern Portugal, such as Citânia de Briteiros. Because of this, he saw himself as an ethnologist, rather than an archaeologist.¹⁰⁰ Not all investigations were tied to national identity, however. Sebastião Phillippes Martins Estácio da Veiga (1828–1891), born to a noble family from the Algarve countryside,¹⁰¹ carried out systematic surveys and excavations of the Algarve, reporting on sites dated to the Neolithic through Medieval era. These were published in four large tomes entitled *Antiguidades monumentais do Algarve* (*Monumental Antiquities of the Algarve*).¹⁰²

A host of institutions and museums were founded at this time.¹⁰³ In 1848, for example, the Comissão dos Trabalhos Geológicos (Commission of Geological Studies) was created, with Charles Bonnet (1816–1867) as president.¹⁰⁴ This society sponsored the important work of Carlos Ribeiro (1813–1882), Francisco António Pereira da Costa (1809–1889), and Joaquim Filipe Nery Delgado (1835–1908) on the Portuguese Paleolithic and Mesolithic, including the shell middens (*concheros*) at Muge.¹⁰⁵ It was later to be called the Serviços Geológicos de Portugal (Portuguese Geological Service). In 1849, a society of dilettanti known as the Sociedade Archeologica Lusitana (Lusitanian Archaeological Society) was founded.¹⁰⁶ In 1863, the Real Associação dos Arquitectos Civis e dos Arqueólogos Portugueses (Association of Portuguese Civil Architects and Archaeologists) was inaugurated under the initiative of Joaquim Possidónio Narciso da Silva (1806–1896), the architect of Casa Real who later founded the Museu do Carmo (Carmo Museum), which is still extant.¹⁰⁷ The association was designed to elevate the professional and social status of Portuguese architects.¹⁰⁸ Possidónio was instrumental in forming the Comissão dos Monumentos Nacionais (Commission of National Monuments) in 1880, a government ministry designed to protect Portuguese archaeological patrimony, which, while privileging Roman sites and artifacts, also included prehistoric sites, such as megaliths.¹⁰⁹ Possidónio also instituted the first course in archaeology (1º Curso Elementar de Arqueologia [First Elementary Course in Archaeology]) on June 7, 1885 (which lasted until January 1886) in the Museu do Carmo.¹¹⁰ This course, which covered the evolution of 'man' through later prehistory, drew thirty-five students from throughout Portugal and even Brazil.

During the later decades of the nineteenth and early decades of the twentieth centuries, important political changes took place in Portugal, as throughout Europe. Portugal's monarchic rule came to an end, and in 1910 the country became a republic. The institutionalization of archaeology during this time, in a manner similar to that of other European nations, enabled the Portuguese to more easily articulate with other European prehistorians.

One important forum for intellectual exchange was the “International Congress of Anthropology and Prehistoric Archaeology,” and particularly the ninth congress, held in Lisbon in 1880.¹¹¹ Indeed, after attending the papers by the Portuguese prehistorians, Cartailhac glorified the Iberian Peninsula as “the promised land of the prehistorians.”¹¹² The first archaeological textbook, *Introdução á archeologia da Península Ibérica* (*Introduction to the Archaeology of the Iberian Peninsula*), was published in 1878 by Simões. The archaeological journals *Revista de Guimarães* (*Journal of Guimarães*) and *O Arqueólogo Português* (*The Portuguese Archaeologist*) put out their first issues in 1884 and 1895, respectively. In 1893, José Leite de Vasconcellos (1858–1941) founded the Museu Etnográfico (Ethnographic Museum) in Belém, which in 1897 was renamed the Museu Etnológico Português (Portuguese Ethnological Museum), and of which he remained the director until 1929.¹¹³ Vasconcellos was a polymath – a philologist, ethnographer, archaeologist, and numismatist. Prior to directing the museum, he was a curator at the Biblioteca Nacional (National Library) of Lisbon and professor of numismatics.¹¹⁴

With the outbreak of World War I, Portugal, similar to the other European nations, experienced heightened nationalistic sentiments. Patriotism and politics were intimately related to archaeology and often became explicit in archaeological writings around this time. Scholars have argued that government regimes at the time did not overtly manipulate or appropriate archaeological monuments for political purposes. For example, Fabião has stated that “there have been no remarkable cases in Portugal of a nationalistic appropriation of archaeological interpretations or of uses of archaeological monuments as national symbols.”¹¹⁵ However, archaeologists did use the past and archaeological discourse to trumpet the glories and values of the Portuguese nation.

One notable example of this is an article by Vasconcellos in 1914 and published in *O Arqueólogo Português*. It was ostensibly written to discontinue the use of French terms in describing Portuguese archaeological artifacts and site types, but, in fact, it was a thinly disguised declaration of fervent Portuguese nationalism and anti-French sentiments.

Those people who theoretically most declare patriotic sentiments are, sometimes, those who least practice it. Patriotism does not mean to rant; it is to carry out all that is possible to contribute toward the aggrandizement of one's country. No one would disagree, I suppose, that between the forms of patriotism one would count speaking and writing well in the mother tongue, which constitutes one of the bonds of nationality. At this time, the Portuguese language is so neglected, that it does not appear to me to be superfluous that he who in his heart, and not only in his voice, professes patriotism, should encourage this sentiment in order to improve the actual state of things. Those who deal with archaeological nomenclature know of those readers who “bastardize” and debase (the Portuguese language), some because of French literature, others for other reasons.¹¹⁶

*Portugal: Archaeology under the Salazar Dictatorship*¹¹⁷

In 1932 the republic was overthrown, beginning the country's military dictatorship under António de Oliveira Salazar, which lasted until 1974. Salazar was prime minister of Portugal from 1932 until 1968, when he suffered a coma resulting from injuries sustained in a fall. Although not in control of his nation after his incapacitation (he died in 1970), his regime can be said to have lasted until April 25, 1974, when rising opposition from within the military over the colonial wars in Africa led to a coup d'état, which was followed by the withdrawal of Portuguese administration from its remaining colonies in Africa and Asia. Portugal avoided, however, much of the bloodshed of World War II with her declaration of neutrality (as did Spain). Under Salazar's regime known as the *Estado Novo*, nationalism, isolationism, and conservatism were promoted, and these values shaped archaeological narratives and, at times, intersected with archaeological practice.

It has been said that Salazar and his supporters did not get involved in the manipulation of the archaeological past. "For whatever reasons, Portugal did not follow most Nazi and other Fascist regimes in the development archaeology as a means to legitimate the grandeur of the 'fatherland'." ¹¹⁸ Indeed, the archaeological community was small (approximately 100 people), relatively isolated, and largely made up of amateurs centered in the coastal cities of Lisbon, Porto, and Coimbra, as the Portuguese interior was still quite isolated because of poor roads. ¹¹⁹ However, close ties between Salazar and institutions involved in overseeing or promoting archaeological research, such as the Junta Nacional de Educação (National Committee on Education), ¹²⁰ Academia Portuguesa da Historia (Portuguese Academy of History), and Centro Piloto de Arqueologia (Pilot Center of Archaeology [CPA]), meant that archaeology was generally linked to the values promoted by his regime, and the work of archaeologists was always under surveillance.

Salazar founded the Academia Portuguesa da Historia in 1936 and appointed General António Oscar de Fragozo Carmona, president of Portugal, as its first honorary president. The Academia was envisioned as

a specialized society of scholars who devote themselves to the investigation and critical reconstitution of the past, which has, as its primary objectives, the stimulation and coordination of the revisionist efforts for the reintegration of the historical truth and the enrichment of the documentation of the inalienable rights of Portugal. ¹²¹

The Academia also saw its mission to be the publication of works in Portuguese and other languages that highlight the civilizing expansion of Portugal in the world. ¹²² The Academia counted among its members the most prominent Portuguese prehistorians and historians of the day. They included Manuel

Afonso do Paço and Eugenio dos Anjos Jalhay, both investigators in Copper Age research. Paço (1895–1968) was one of the most active prehistorians working during Salazar's regime. Paço received a degree in philology of romance languages at the University of Lisbon and later attended military school. At the time he was an official in the Portuguese Army (he attained the rank of colonel), he was codirecting the excavations of the Copper Age type site, Vila Nova de São Pedro, with his colleague and Jesuit priest, Eugenio dos Anjos Jalhay (1891–1950). Paço and Jalhay worked at and published the material from numerous other, now classic, Copper Age sites, including the settlements of Parede and Pedro do Ouro, the rock-cut tombs at Alapraia, and the cave burials at Estoril and Cascais. That Paço and Jalhay were not trained as archaeologists was not unusual at that time. The *licenciatura* (rough equivalent of a master's degree) was not offered in Portugal until after the 1974 revolution.¹²³

Another institutional link between the government and archaeology was the CPA. The CPA organized the participation of youth in archaeological investigations and was sympathetic to Salazar's government, so much so that, after the revolution in 1974, it was disbanded.

In Salazar's attempt to combat ideologies that he perceived to threaten the integrity of the Portuguese nation, such as communism and the internationalism of the Boy Scout movement, he founded the Mocidade Portuguesa (Portuguese Youth). The Mocidade was a youth group controlled by the State, which participated in physical recreation, religious instruction, paramilitary exercises, and archaeological excavations, such as that at the Copper Age settlement of Parede, excavated by Manuel Afonso do Paço, Eduardo da Cunha Serrão (1906–1991), and Eduardo Prescott Vicente. According to Cunha Serrão, Paço allowed the Mocidade Portuguesa to participate in the excavations "because in this way we would obtain better support, in all aspects, on the part of the entities who had the capacity to concede this support."¹²⁴

In addition to institutional ties between Salazar and archaeologists, and likely because of this, Portuguese nationalism and exceptionalism were woven into archaeological narratives, even of the prehistoric past. For example, António Mendes Correia (1888–1960) argued that megaliths, which were primarily known at that time in Portugal rather than Spain, were part of an ancient west European empire that spread east. In a press conference, he suggested that the birth of the Portuguese nation occurred during the megalithic period (although this idea did not receive official endorsement by Salazar). Curiously, this thesis was based on faked stones with alphabetic symbols found in the megalithic tombs of Carrazedo de Alvão.¹²⁵ Manuel Heleno (1894–1970), the second director of the Museu Nacional de Arqueologia (then known as the Museu Etnológico) and excavator of numerous Paleolithic and megalithic sites in the Estremadura and Alentejo, also saw the origins of the Portuguese people in the distant prehistoric past. To Heleno,

“Portuguese nationality, in its moral unity, was perfectly defined since the time of polished stone tools.”¹²⁶

International conferences were an important arena for archaeologists to meet with others outside the peninsula as well to promote political ideologies. One of these was the “Congresso do Mundo Português” (“Congress of the Portuguese World”) held in Lisbon in 1940. At this meeting, Joseph Piel (1903–1992), on behalf of German universities, read the following statement to an audience that included prominent Portuguese archaeologists:

perhaps more than any other nation, it is possible that the Germany of Hitler understands and admires the Portugal of Carmona and Salazar, and justly offers its praises to a nation, which, being one of the first that successfully realized its political, linguistic, and spiritual *unity*, restoring the *values* of its great past, continues to seek – as we sought in my country – the creative energies that are of the most *pure* national traditions¹²⁷

In spite of the isolationist and nationalist agendas of Salazar’s regime, which generally stifled innovation and international collaborations, important developments occurred in Portuguese archaeology. Some of these were the result of foreign scholars working in Portugal. During the 1940s and 1950s, for example, German archaeologists came to work to Portugal, as they had difficulties working in other parts of Europe. The most notable were the German couple Georg (1870–1957) and Vera Leisner (1885–1972). The Leisners’ key contribution was their meticulous and comprehensive catalogues of the hundreds of megaliths of the Iberian Peninsula.¹²⁸ After the DAI opened an office in Madrid in 1943, it opened a branch in Lisbon in 1972. British archaeology also shaped Portuguese archaeology. Inspired by the grid method developed by the Mortimer Wheeler, Serrão and Vicente carried out the first stratigraphic excavations in Portugal, applying Wheeler’s grid method at the Copper Age settlement of Parede in 1956.¹²⁹ In contrast to Spain, Childe’s work did not have much impact in Portugal, other than on Serrão, who was inspired by his careful methodology.¹³⁰ This was the case despite Childe’s visit to Portugal in 1949, when he toured Portuguese museums and archaeological sites in the company of Portuguese archaeologists, the translation of his books into Portuguese, and the publication of his article in *Revista de Guimarães* on the similarity between prehistoric ceramics in Portugal and Britain. Although *Man Makes Himself* was apparently sold out in less than three months, it has been argued that it was primarily of interest to historians.

Portugal: Archaeology after the Salazar until the Mid-1980s

The Carnation Revolution of April 25, 1974 heralded the beginning of profound political and social changes in Portugal. One of the most important

of these was the independence of its last colonies in Africa and Asia, marking the end of Portugal as an imperial power. Many Portuguese who had lived in these former colonies returned to Portugal. In 1986, the country joined the EU. This period was marked by the intensive recording and survey of archaeological sites and the systematic cataloguing of the holdings of the Museu Nacional de Arqueologia. New international collaborations developed, such as the multiyear investigations of Paleolithic sites in the Rio Maior Basin carried out by João Zilhão and Anthony Marks (USA).¹³¹ Rescue archaeology also intensified, although the first rescue projects occurred just before 1974, such as the work conducted in the Sines industrial area in 1972 and on Tagus Valley rock art between 1971 and 1973.¹³²

*Archaeology in Spain and Portugal: From the 1980s to the Present*¹³³

Following the end of the Franco and Salazar dictatorships, much of the current institutional organization of Spanish and Portuguese archaeology took shape, with the expansion of public universities, the creation of the Spanish autonomous governments, and the entry of both countries into the EU. Today, archaeologists are employed in diverse institutional spaces, each with different stakeholders (or patrons¹³⁴). These include museums, private and public universities, private cultural resource management (CRM) companies, and state or municipal cultural heritage entities. The construction boom that began in the mid-1990s, partially funded by the EU to develop better infrastructure, stimulated hundreds if not thousands of new excavations and employed hundreds of archaeologists. By the late 1980s in Spain, archaeology was managed by the autonomous governments, which fostered the regionalism that now characterizes Spanish archaeology. The economic crisis of 2008–2015 impacted this institutional landscape by eliminating many private CRM firms and employment opportunities for archaeologists.¹³⁵ In Spain, austerity measures undermined the funding of public universities and CSIC departments.

One outcome of both increased access to EU institutions and the economic precarity post-2008 is that Iberian archaeology has become more internationalized. Increasing numbers of Portuguese and Spaniards have gone abroad (to the UK, France, Germany, and USA) for graduate studies, postdoctoral fellowships, or employment. This has led to the development of a new generation of scholars who are more fluent in English and other languages, have stronger international connections, and have been better able to situate Iberian archaeology within a broader European or global context. The success in getting the dolmens of Antequera listed as a UNESCO World Heritage site in 2016 was due, in large part, to these kinds of skills. While Portuguese and Spanish archaeologists still tend to do their primary research within their national borders, they are increasingly going overseas, either as directors of

projects or collaborators with local archaeologists. In recent years, Spaniards have worked in Chile, Peru, Argentina, Morocco, Tunisia, Egypt, Ethiopia, Italy, Syria, and Taiwan, among other countries (reports on these projects are published in *Informes y Trabajos* [*Reports and Works*]). Portuguese archaeologists have been conducting research in the former Portuguese colonies in Africa, specifically Cabo Verde, Angola, and Mozambique.¹³⁶ Students from the former Portuguese colonies in Africa are also coming to Portugal for graduate studies in archaeology. Scholars from Germany, the UK, and the USA have been a presence in Iberia, although German archaeologists through the DAI in Madrid have maintained the strongest and most enduring foreign presence (despite the closure of the Lisbon branch of the DAI in 1999). DAI-led excavations, such as those at the Copper Age settlement of Zambujal (1964–present) and the Bronze Age settlement of Fuente Alamo (1977–1999), have been instrumental in training generations of Spanish and Portuguese archaeologists.

Given this institutional framework, a highly heterogeneous landscape of archaeological practices and theoretical approaches characterizes Iberian archaeology in the twenty-first century. The debates between processualism and post-processualism that occurred in Anglo-American archaeological communities, which sometimes pitted science and the humanities in stark binary terms,¹³⁷ did not take place in Portugal and Spain.¹³⁸ One could say that the extremes of both perspectives were largely avoided. In the 1980s, New Archaeology was widely adopted by a then-younger generation of scholars looking for alternatives to the cultural historic approach that had dominated Spanish and Portuguese universities throughout the twentieth century. Since then, many tenets of New Archaeology have been further developed, such as functionalism, scientific techniques, and evolutionary concerns (e.g., debates over the state in the third and second millennia BCE). In general, however, archaeologists did not adopt the hypothetico-deductive methodology, holistic, ecological, or systems-based approaches to culture, or an overarching concern with comparative social forms and ethnography that characterizes “classical” processualism. This is likely due to their disciplinary home and training within history departments. Cultural historical perspectives and concerns, however, continue to characterize significant proportions of late prehistoric research. Materialist or Marxist orientations to technology, power, and social life also enjoy currency. As with processualism, post-processualism was selectively incorporated into understandings of later prehistory. For example, there has been increased attention to the political/social entanglement of the practice and history of archaeology¹³⁹ as well as to gender archaeology, although mainly in Spain.¹⁴⁰ Another theoretical premise of post-processualism that has been adopted by some is the notion that object/monument production and use are constitutive of social life,¹⁴¹ and not simply passive markers of status or identity. By focusing on practice rather than meaning, studies inspired by

the critical turn have weakened distinctions between the secular and sacred, and between the domestic and funerary, and transformed research agendas that had been focused on classification and typology.

Another important change has been a shift from site-centered archaeology to landscape studies. Subsequent developments in geographic information systems (GIS) and the rise of CRM/heritage management in Portugal and Spain, coupled with insights drawn from post-processualism, have firmly established landscape studies. In Spain, each autonomous government developed their own CRM system, with early efforts in Galicia and Andalucía, and GIS was instrumental in documenting and managing the cultural (and environmental) resources in their territory. Landscape approaches have also generated new practices, with larger more interdisciplinary teams working together to address common problems and to interpret sites as part of integrated social networks.

SOME CONCLUSIONS

Iberian archaeology has a long history, which, like many European countries, saw its first expressions in the antiquarianism of the sixteenth to eighteenth centuries. An important turning point occurred in 1833, when monastic orders in Portugal and Spain were dissolved and their property and possessions appropriated by the State. Antiquities that had been housed in convents and monasteries were moved to archives and museums. This event triggered a secular and more scientific interest in these remains by antiquarians, historians, and geologists, as well as the formation of archaeological societies and journals, many of which are still active today. Between the 1930 and 1970s, Portugal and Spain were under military dictatorships, and archaeology was generally nationalist and colonialist in its orientation, although practiced as a form of culture history. Archaeology as a historical or humanistic science, with diverse theoretical strands, emerged after the end of these regimes in the mid-1970s and has undergone profound shifts, shaped in large part by national, European, and global forces.

ENDNOTES

- 1 Góngora y Martínez 1868:70.
- 2 Pina, interviewed by António Alegria and Carla Magro in 2007, <https://sites.google.com/site/boletimevora/aantagrandedoambujeironamemóriadoarqueó>.
- 3 García Guinea 1988:VIII, 20.
- 4 de Blas Cortina 2015; García Sanjuán and Díaz-Guardamino 2015.
- 5 Gomes *et al.* 1983; Araújo and Lejeune 1995.
- 6 Straus and González 2014:2348.
- 7 Lillios 2010.

- 8 García Castro 1988:430.
- 9 de Vasconcellos 1882:62–63; García Castro 1988:437–440.
- 10 Bradley 2002.
- 11 Hamilakis 1999, 2007.
- 12 Horden and Purcell 2000; Cunliffe 2001; Abulafia 2011; Broodbank 2013.
- 13 Alfaro Giner 1980; Cacho Quesada *et al.* 1996.
- 14 Díaz-Andreu García 1997:6.
- 15 Cartailhac 1902.
- 16 Bednarik 1995.
- 17 Díaz-Andreu García 1997:8.
- 18 Martínez Navarrete 1997–1998.
- 19 García Marín *et al.* 1997.
- 20 Simões 1878; Cartailhac 1886; Savory 1968; MacKendrick 1969.
- 21 Barandiarán *et al.* 1998.
- 22 Almagro Gorbea 2014.
- 23 da Veiga Ferreira and Leitão 1981.
- 24 Cardoso 2002.
- 25 Jordá Cerdá *et al.* 1986.
- 26 Ruiz-Gálvez Priego 1988.
- 27 Menéndez Fernández 2012, 2013.
- 28 Obermaier 1916, 1925; Straus 1992, 2018a.
- 29 Vega Toscano *et al.* 2003; Fernández Vega 2011.
- 30 Harrison 1988; Fernández Castro 1995; Almagro Gorbea *et al.* 2001.
- 31 Harrison 1977.
- 32 Gilman and Thornes 1985; Chapman 1990, 2003; Díaz-del-Río and García Sanjuán 2006; Cruz Berrocal *et al.* 2013.
- 33 de Terán 1949:4.
- 34 Saramago 1996 (Portuguese original in 1986).
- 35 Biscaia 2017.
- 36 Araújo *et al.* 2007:1424.
- 37 Benito Calvo *et al.* 2009.
- 38 Renzi *et al.* 2009; Rafel i Fontanals *et al.* 2010.
- 39 Tornos *et al.* 2008.
- 40 Müller and Cardoso 2008:fig. 1.
- 41 Geirinhas *et al.* 2011.
- 42 Bray *et al.* 2015.
- 43 Comendador *et al.* 2014a.
- 44 Nocete Calvo *et al.* 2014.
- 45 Pérez-García *et al.* 2000.
- 46 Comendador *et al.* 2014b.
- 47 Schütt 2005.
- 48 Castro Martínez *et al.* 2000.

- 49 The interior/coastal dualism of Portugal is viewed as a product of the modernization of the country (Ferrão 2002). Prior to modernization, Ferrão argues that a north/south divide structured the cognitive map of Portuguese, with the north associated with “ancestral” groups, such as Celts, and the south associated with “foreign” peoples, such as Phoenicians and Islamic peoples.
- 50 Arias Cabal *et al.* 2009a.
- 51 Díaz-del-Río 2004a:109.
- 52 Sabater *et al.* 2009.
- 53 Trigo *et al.* 2004.
- 54 Expósito and Berbel 2017.
- 55 Gilman and Thornes 1985; Lull *et al.* 2015a.
- 56 Simões 1878.
- 57 Vilanova y Piera and de Dios de la Rada y Delgado 1892:22, in Díaz-Andreu García 1997:15.
- 58 This foundation narrative is complicated by the fact that its territory was made up of Muslim and Christian territories between 711 and 1492 and included Portugal between 1580 and 1642 (Díaz-Andreu García 1996).
- 59 I am grateful to Margarita Díaz-Andreu García for this information.
- 60 Mora 2017:15.
- 61 Díaz-Andreu García 1997:10–13.
- 62 Rodes 2017.
- 63 This organization was created in 1858 with the name Corps of Professional Archivists and Librarians, and in 1900 was renamed the Corps of Professional Archivists, Librarians and Archaeologists. I am grateful to Margarita Díaz-Andreu García for this information.
- 64 Góngora y Martínez 1868; Ruiz *et al.* 2002.
- 65 Díaz-Andreu García 1997:14. Paris, for example, secured the purchase of the famed Dama de Elche for the Louvre in 1897, despite strong local opposition to its sale and seizure. The Dama “affaire” led to new regulations in Spain forbidding the sale/export of antiquities. The Dama remained in France until 1941, when it was moved to the Prado, and it is currently housed in the Museo Arqueológico Nacional in Madrid (Ramos Fernández 1989; Carmona-Zubiri and Nogués-Pedregal 2010).
- 66 Martínez Navarrete 1997–1998.
- 67 Díaz-Andreu García 2012.
- 68 Díaz-Andreu García 1995; Díaz-Andreu García and Cortadella 2006.
- 69 Bosch-Gimpera 1932.
- 70 Díaz-Andreu García and Ramírez-Sánchez 2004:112–115; Gracia Alonso 2008, 2017.
- 71 Keay and Díaz-Andreu 1997:2.
- 72 Junker 1998.
- 73 Hauschild *et al.* 2006.

- 74 Hauschild *et al.* 2006:91.
- 75 Marzoli *et al.* 2018.
- 76 Mederos Martín 2017.
- 77 Díaz-Andreu García 1993:75.
- 78 Díaz-Andreu García and Ramírez-Sánchez 2004:115.
- 79 Díaz-Andreu García and Ramírez-Sánchez 2004:126.
- 80 Gilman 1995:3.
- 81 Díaz-Andreu García 1995.
- 82 For example, Bosch-Gimpera 1932; Martínez Santa-Olalla 1946; del Castillo Yurrita 1947; Pericot 1950.
- 83 Vázquez Varela and Risch 1991.
- 84 Keay and Díaz-Andreu 1997:2; Díaz-Andreu García 1998a, 2007.
- 85 Díaz-Andreu García 2007.
- 86 Alcina Franch 1987; Jorge and Jorge 1995.
- 87 Díaz-Andreu García 1998a:61.
- 88 Vázquez Valera and Risch 1991.
- 89 Lull 1988:74.
- 90 Fernández 2016.
- 91 Cardoso 2000.
- 92 Duarte 1999.
- 93 Resende 1593.
- 94 Fabião 1996:92–95.
- 95 Fabião 1996:92.
- 96 Patrocínio 2006.
- 97 www.patrimoniocultural.gov.pt/pt/museus-e-monumentos/rede-portuguesa/m/museu-de-evora/.
- 98 Díaz-Andreu García 1997:1.
- 99 Fabião 1996:93.
- 100 Farinha dos Santos 1981:127.
- 101 Cardoso 2007.
- 102 Estácio da Veiga 1886, 2005.
- 103 See chapter 2 of Coelho 2018 for a discussion of the institutionalization of Portuguese archaeology prior to the dictatorship.
- 104 Farinha dos Santos 1980:261.
- 105 Farinha dos Santos 1981; Serrão, J. 1983:195.
- 106 Díaz-Andreu García 1997:10.
- 107 Serrão, J. 1983:195
- 108 Martins 1999:15.
- 109 Martins 2001a.
- 110 Martins 2001b:92.
- 111 Farinha dos Santos 1980:258.
- 112 Siret 1913:ix.
- 113 Serrão, J. 1983:196.

- 114 Coito *et al.* 2008.
- 115 Fabião 1996:90.
- 116 de Vasconcellos 1914:176.
- 117 Portions of this section are excerpted from Lillios 1995.
- 118 Jorge and Jorge 1995:255.
- 119 Jorge and Jorge 1996.
- 120 Coelho 2018.
- 121 Academia Portuguesa da Historia 1937–1938, boletim, Lisbon:91.
- 122 Academia Portuguesa da Historia 1937–1938, boletim, Lisbon:197.
- 123 Arqueologia ao serviço do fascismo. *Diário de Lisboa*, May 31, 1974.
- 124 Serrão, E. C. 1983:123–125.
- 125 Fabião 1996:95.
- 126 Gago *et al.* 2013:223.
- 127 Congresso do Mundo Português. 1940. Lisbon: Comissão Executiva dos Centenários.
- 128 Boaventura and Langley 2007.
- 129 Serrão, E. C. 1983.
- 130 Childe 1950; Carvalho 1989; Díaz-Andreu García 1998a; Gonçalves 2011; Martins 2017.
- 131 Zilhão *et al.* 1995a.
- 132 Jorge and Jorge 1995.
- 133 Portions of this text have been excerpted from Lillios 2018.
- 134 Gilman 1995.
- 135 For Spain, see Parga-Dans and Varela-Pousa 2014; for Portugal, see Costa *et al.* 2014.
- 136 Antonio Faustino Carvalho, personal communication, 2017.
- 137 Earle *et al.* 1987.
- 138 Vázquez Varela and Risch 1991; Gilman 2000; Martínez Navarrete 2002.
- 139 Lillios 1995; Fabião 1996; Díaz-Andreu García 1997, 2002; Martins 2001a.
- 140 Jorge and Jorge 1996; Sánchez Liranzo 2002; Cruz Berrocal 2010; Montón-Subiás 2010; Alarcón García and Sánchez Romero 2015.
- 141 For example, Valera 2007.

THE FIRST IBERIANS AND LAST NEANDERTHALS: THE LOWER AND MIDDLE PALEOLITHIC (1,400,000–35,000 BP)

INTRODUCTION

Paleolithic studies in the Iberian Peninsula have played a central role in the history of archaeology and contributed key insights into debates on human evolution. It was in Spain and Portugal that learned individuals from diverse disciplines and national origins conducted some of the first archaeological investigations of the European Paleolithic. They included Portuguese geologist Carlos Ribeiro, Spaniards Enrique de Aguilera y Gamboa, better known as the Marqués de Cerralbo (1845–1922), and Hermilio Alcalde del Río (1866–1947), Basque archaeologist and ethnologist Father José Miguel de Baradiarán (1889–1991), German Hugo Obermaier, French prehistorian and priest Henri Breuil (1877–1961), and Russian-Polish paleontologist Georges Zbyszewski (1909–1999).¹ Prehistorians and the public first learned of the possibility of Paleolithic cave art in 1880, after Marcelino Sanz de Sautuola (1831–1888) and Juan Vilanova y Piera presented the art of Altamira at the International Congress of Anthropology and Prehistoric Archaeology in Lisbon, although not everyone, such as French prehistorian Gabriel de Mortillet (1821–1898), believed the paintings were authentic. The earliest traces of hominid occupation in Western Europe are found on the Iberian Peninsula, with dates pushing 1–1.4 mya for sites in the Guadix-Baza Basin in Andalucía. In addition to these firsts, research at Paleolithic sites, such as the Atapuerca and La Pasiega caves in Spain, and the Lagar Velho rock-shelter and Côa Valley in Portugal, have revolutionized and complicated our thinking about the timing of key evolutionary milestones, the relationship between Neanderthals and anatomically modern humans (AMH),² and the symbolic behavior of Neanderthals.

This chapter summarizes the ecological contexts for these cultural and biological processes, outlines the chronology and cultural sequences for the Iberian Lower and Middle Paleolithic, and discusses key findings and debates, with reference to relevant relationships to neighboring regions, such as

southwest France and North Africa.³ Any effort to synthesize the archaeology of such a geographically heterogeneous region, particularly for the Paleolithic with its unfathomable gaps in evidence, has to be done with great humility. New sites are discovered, aDNA (ancient DNA) studies revise phylogenies of early hominins, and ongoing analyses and dating of archaeological contexts and landscapes regularly shape our understandings of ancient hominin behavior. Furthermore, research is uneven throughout the peninsula, and it is unclear whether the absence of sites in a region represents the absence of occupation. The main challenge is that there are relatively few sites dated to the first one million years of occupation. Even if these hundred or so sites were evenly divided over this span of time, we would still be looking at “pings” of hominin activities spaced over 10,000-year intervals. This chapter discusses what these isolated pings tell us.

PINGS FROM THE VOID: THE EARLY AND MIDDLE PLEISTOCENE/LOWER PALEOLITHIC (1.4 MYA–125 KYA)

The Early Pleistocene: 1.4 mya–800 kya

Who were the first Iberians, and where did they come from? Given currently available evidence, the first people reached the Iberian Peninsula in the Early Pleistocene, between 1.4 mya and 800 kya. The exact timing of their arrival, the permanency and continuity of their occupations, and the route or routes they took are debated. One reason for these uncertainties is that Pleistocene deposits have been preserved or exposed in only a few geographic contexts. These include the deep gravels of the Guadix-Baza Basin in southeast Spain, the raised coastlines of the Portuguese Estremadura, deep caves in karstic zones, and river terrace gravels (Figure 2.1). Also contributing to this hazy view are the high standard errors associated with dating methods for these time periods, which include electron spin resonance, thermoluminescence (TL), optically stimulated luminescence, uranium series, and paleomagnetism.

When the first people arrived to the Iberian Peninsula, ca. 1.4 mya, the landscape was different than it is today. In the Guadix-Baza Basin, where the earliest evidence for hominins has been found, conditions were warmer and wetter; mean annual temperatures were more than 4°C higher and precipitation more than 400 mm higher than present.⁴ However, the Strait of Gibraltar, which today separates the peninsula from North Africa by 12–14 km, had already been formed.⁵ The Pleistocene was a dynamic period climatically, punctuated by cold glacials and warmer interglacials,⁶ with marked differences between the Eurosiberian zone of the Cantabrian-Galician coast and the Mediterranean coast and interior of Iberia. The peninsula’s southerly location and milder climate, relative to the European continent, meant that it was a refugium for plants, animals, and humans during glacial periods.

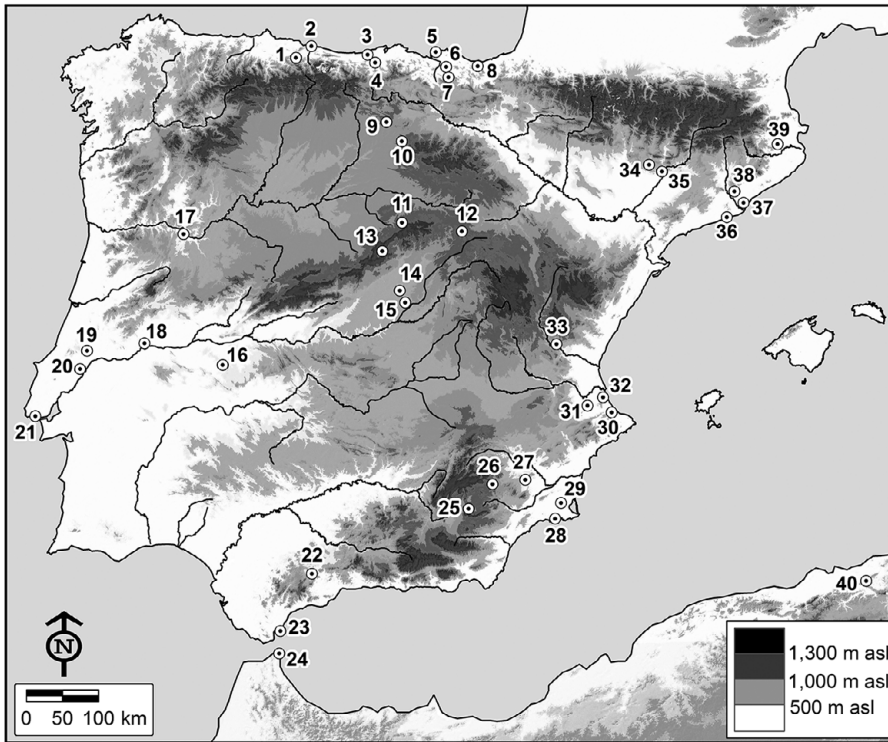


Figure 2.1 Lower and Middle Paleolithic sites discussed in the text (key sites). 1. El Sidrón; 2. Tito Bustillo; 3. Altamira; 4. El Castillo & La Pasiega; 5. Aranbaltza III; 6. Arlanpe; 7. Axlór; 8. Amalda; 9. Valdegoba; 10. Sierra de Atapuerca; 11. Abrigo del Molino; 12. Torralba & Ambrona; 13. Pinilla del Valle; 14. El Cañaveral; 15. Áridos; 16. Maltravieso; 17. Côa Valley; 18. Foz do Enxarrique & Vilas Ruivas; 19. Lapedo Valley & Gruta de Aroeira; 20. Almonda; 21. Alto de Leião; 22. Ardales; 23. Forbes' Quarry, Gorham's & Vanguard Caves; 24. Benzú; 25. Guadix-Baza sites; 26. Cueva Negra; 27. Cueva Antón; 28. Cueva de los Aviones; 29. Sima de las Palomas; 30. Cova Foradà; 31. Cova Negra; 32. Bolomor; 33. Quebrada; 34. Tragó; 35. Roca dels Bous & Cova Gran; 36. Cova del Gegant; 37. Abric Romaní; 38. Vallparadís; 39. Bañolas; 40. Ain Hanech & El-Kherba.

Map: Antonio Blanco-González

Until the nineteenth century, European prehistorians believed the first people arrived in Europe, including the Iberian Peninsula, during the Middle Pleistocene and were associated with Acheulean tools. This thinking persisted until the twentieth century, with some arguing that there was no unambiguous evidence for hominin occupation in Iberia (or Europe) prior to 500,000 BP.⁷ This model is known as the “short chronology.” However, newly discovered and excavated sites in the Iberian Peninsula that push the boundary back to 1–1.4 mya have posed a serious challenge to this model. The long chronology (or mature Europe) model has gained ground. Skepticism remains,⁸ while Roebroeks⁹ pointed out that, in addition to identifying patterns in the

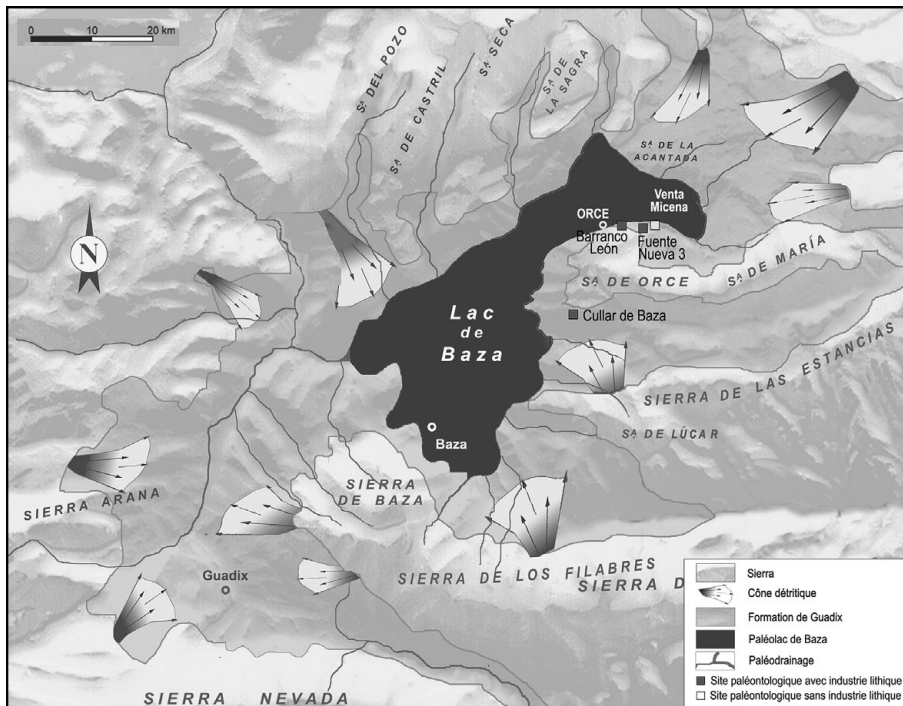


Figure 2.2 Guadix-Baza Basin.

From: Barsky *et al.* 2010, fig. 2; drawing: B. Magnaldi; courtesy: I. Toro-Moyano and H. de Lumley

spatiotemporal distribution of early sites, archaeologists need to do a better job in explaining their patterning in terms of biogeography.

The oldest of the well-dated sites are in Spain – at Barranco León, Fuente Nueva 3, Sima del Elefante, Vallparadís, Gran Dolina, and Cueva Negra. Some have hominins, European Mode 1 tools (pre-Acheulean, cobble-based lithic, Oldowan-like), or faunal remains (some with cut marks). Other sites, also found in Portugal, have produced European Mode 1 tools, but lack fossils and have not been directly dated. The Portuguese sites, located primarily along the raised beaches of the Estremadura coast and in river terraces, include Alto do Leão.¹⁰

At present, the contender for the earliest date is Barranco León.¹¹ It is one of a number of sites found along the ancient swampy shores of the Baza paleolake in the Guadix-Baza Basin in southeast Spain, where deep Pliocene and Pleistocene deposits have been preserved (Figure 2.2). Barranco León has produced an early hominin tooth, Mode 1 lithics, and fauna. The fauna include hippopotamus and elephant, some with fracture types and cut marks indicative of butchering. The lithics are characterized by cores, small flakes, and unmodified cobbles, some of which could be refitted (Figure 2.3). The assemblage, however, is not standardized and is difficult to classify. The flakes are typically made from local tabular flints and produced by unidirectional knapping. Limestone was used for

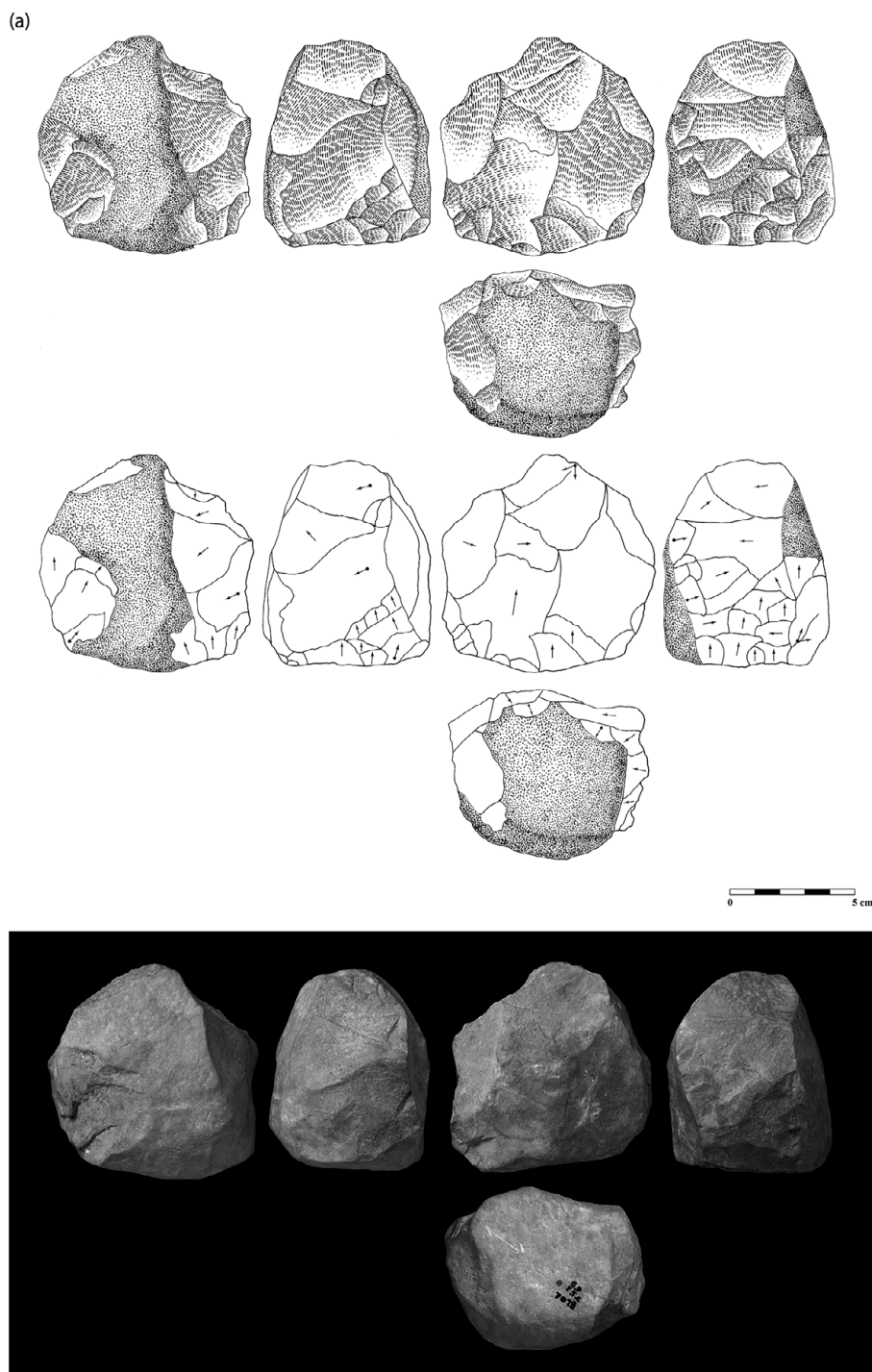


Figure 2.3 Lithics from Barranco León. (a) Limestone core; (b) flakes.

A from: Barsky *et al.* 2010, fig. 10; drawings: D. Cauche; courtesy: H. de Lumley. B from: Barsky *et al.* 2010, fig. 21; drawings: D. Cauche, V. Celiberti, and M. Montesinos; courtesy: I. Toro-Moyano and H. de Lumley

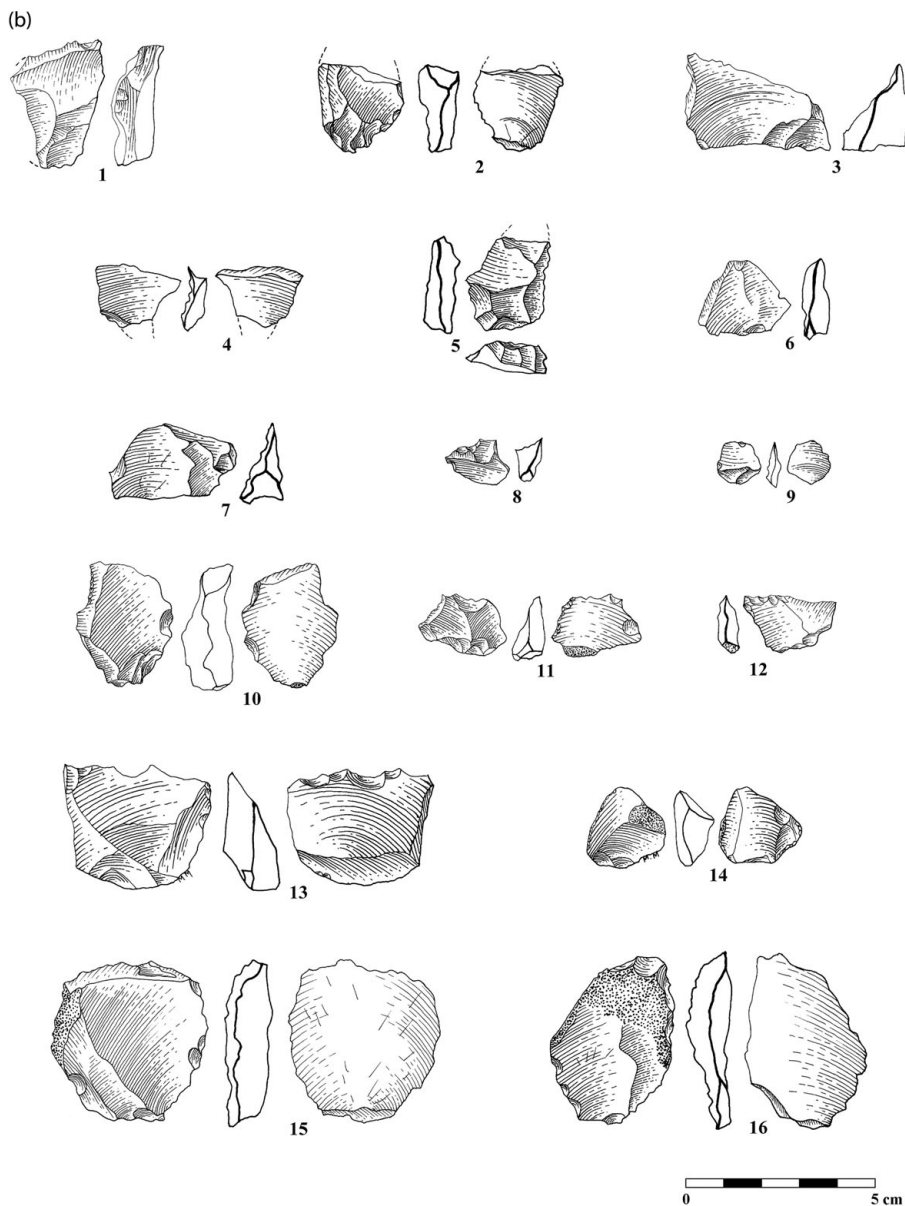


Figure 2.3 (cont.)

percussion instruments and worked cobbles. The only hominin fossil recovered, to date, is a deciduous molar from layer D, associated with lithics and mammal bones. Different methods were used to date this layer, including electron spin resonance, biochronological studies using morphological and morphometric data of vole (*Mimomys savini*),¹² and fossil amphibians and reptiles.¹³ These data indicate that the site was occupied during a warm interglacial peak between MIS (Marine Isotope Stage) 43 and 49, between 1.36 and 1.47 mya. A second

deciduous molar was found 9 m from the first, but whether it is that of a hominin or a hippopotamus is debated.¹⁴

Another early hominin site in the Guadix-Baza Basin is Fuente Nueva 3, located around 4 km from Barranco León.¹⁵ Fauna, including hippopotamus and elephants, and lithics similar to Barranco León were recovered, but no fossil hominins, to date. Paleomagnetic, biochronological data, and climate reconstruction indicate that the site, like Barranco León, was occupied during a warm interglacial peak between MIS 43 and 59, although it is somewhat more recent (by ca. 60,000 years).¹⁶ The site has provided indirect evidence in the form of coprolites and lithics for competition between hyenas and hominins over an elephant carcass.¹⁷

A third Early Pleistocene site in the Guadix-Baza Basin is Venta Micena. Dated to 1.6–1.5 Ma, it is associated with a rich accumulation of faunal remains that were consumed or modified by hyaenids (*Pachycrocuta brevirostris*) and provides additional insights into the paleoenvironmental context and primary competitors of the earliest hominins in Iberia.¹⁸ Venta Micena was made famous when paleontologists discovered a 10 cm cranial fragment (VM-o) in 1982.¹⁹ The fossil was lauded as evidence of the “first European” who came to Iberia by crossing the Strait of Gibraltar. Later studies, which involved further cleaning of the fossil, revealed a crest that more strongly suggested that it was not a hominin at all, but *Equus*, a “common and ordinary horse” or donkey.²⁰

Competing with the Guadix-Baza sites for the earliest hominin traces in Iberia are the caves of the Sierra de Atapuerca, some 700 km to the north, near Burgos, Spain. A UNESCO World Heritage Site, the caves were first discovered in the late nineteenth century when workers for the British Mining Company cut the Sierra to create a long trench for a mine railway (known as the Trinchera del Ferrocarril), linking the towns of Monterrubio de la Demanda and Villafraja, and exposed cavities and infillings.²¹ To date, fifty infilled cavities are known. Among these are the Early and Middle Pleistocene sites of Sima del Elefante, Gran Dolina, Sima de los Huesos, and Galería (Figure 2.4). Excavations at these sites and analyses of their finds are ongoing. The sierra is a special place, as it is dotted with sites spanning over one million years of human history.²² Its rich history is due to its location overlooking the Arlanzón River and valley (Figure 2.5), which would have attracted wild game, as well as its proximity to the Bureba Pass, which provides passage between the Ebro and Douro river basins and access to both the Atlantic and Mediterranean.

The earliest evidence for hominins in the Atapuerca system is at Sima del Elefante, or Trinchera Elefante (TE).²³ First tested in 1986 by Aguirre and systematically excavated beginning in 1996, the site is a deep cave, with deposits 25 m thick and divided into 21 litho-stratigraphic units, with its earliest levels (TE8–TE14) dated by paleomagnetism to the Early Pleistocene, between 1.1 and 1.4 Ma. Within these levels, fauna, stone tools (primarily flakes and flake fragments made from local cherts), and three hominin fossils

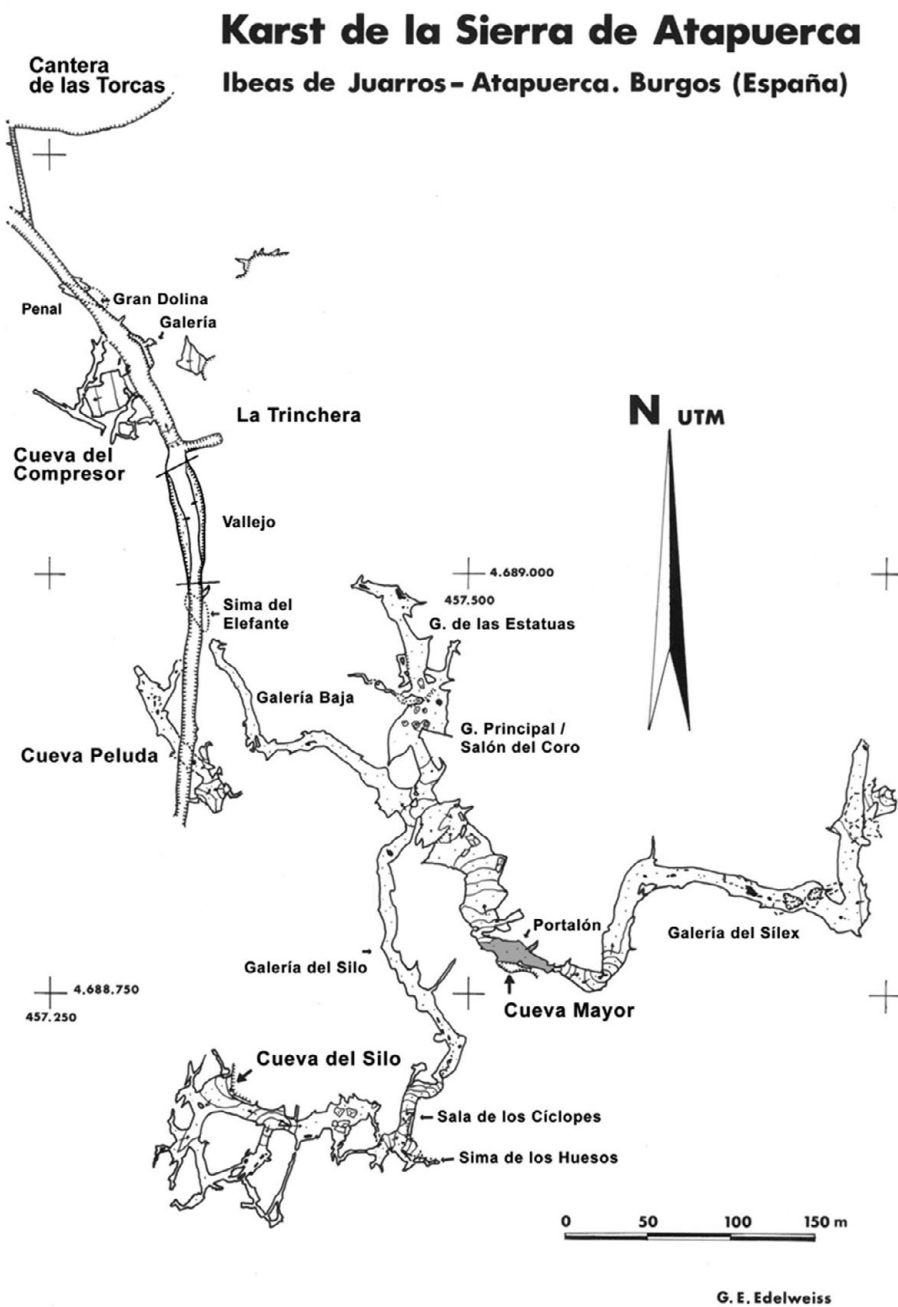


Figure 2.4 Atapuerca sites.

From: Carbonell Roura *et al.* 2014, fig. 1; courtesy: José Miguel Carretero



Figure 2.5 View of Sierra de Atapuerca and Arlanzón River Valley.

Photo: Katina Lillios, 2016

were found. The fossils include a mandible, proximal hand phalanx, and humerus fragment.²⁴ Originally all assigned to *Homo antecessor*, more recent analyses of the mandible have suggested a less specific *Homo* sp. designation for it and the other fossils. Later levels of the site, TE18–TE19, dated to the Middle Pleistocene, have also produced abundant fauna and lithics.

Further evidence for continuous occupation of the peninsula during the Late Early Pleistocene is found at Vallparadís, in northeast Spain. Alluvial and fluvial sediments along the banks of Vallparadís River, where it flows through the city of Terrassa, produced a rich sequence of Pleistocene deposits. In Layer 10 in Unit 7 at Vallparadís, sediments associated with Mode 1 stone tools made from a range of raw materials (naturally transported to the site) and fauna, some with cut marks, have been dated by ESR–Ur (electron spin resonance–uranium series) to 0.83 ± 0.07 Ma.²⁵

Within the 18 m infill at Gran Dolina, another one of the Atapuerca caves, archaeologists found the most abundant and well-dated evidence for early Iberian – and European – hominins. Excavations began at Gran Dolina in 1981 (Figure 2.6).²⁶ In 1994, archaeologists reached TD6 (the Aurora stratum), the level where the first remains of a new species – *H. antecessor* – were found in association with lithics and fauna (Figure 2.7). Using a range of methods, TD6 was dated to 800,000 ya (MIS 21). The fossils found in 1994 were the skull fragments of a child, nicknamed El Niño de la Gran Dolina (Figure 2.8). Over subsequent seasons, the remains of additional individuals were recovered that display a mosaic of attributes similar to modern humans (e.g., midfacial morphology), Neanderthals (e.g., minimally projecting mastoid process), and some hominins of the Middle Pleistocene of China (e.g., buccal surface of



Figure 2.6 Gran Dolina.

Photo: Javier Trueba/Courtesy Science Photo Library

upper premolars).²⁷ Most of the remains have cut marks suggestive of cannibalism.²⁸ In addition to fauna, mineralized *Celtis* (hackberry) seed remains were found in association with occupational evidence.²⁹ These seeds provide a tantalizing glimpse of food sources other than meat for early hominins and are reminders of all that is missing from our understanding of early hominin diet.

Close in date to the TD6 level at Gran Dolina is the rock-shelter of Cueva Negra del Estrecho del Río Quípar (or Cueva Negra) in Murcia.³⁰ There, the excavation team recovered archaic hominin teeth (*Homo* cf. *heidelbergensis*), lithics (so-called Acheulo-Levalloiso-Mousteroid), and possible evidence for fire in the form of heat-shattered cherts and white calcined animal bones. The levels in which these finds were recovered were dated by paleomagnetism to greater than 0.78 ka and less than 0.99 ka BP (within the Matuyama reversed magnetochron). Excavations initiated in 1990 by Walker and his team corrected previous inaccuracies about the site and dating; for example, earlier publications indicated that the teeth found were those of Neanderthals.³¹ There is some debate over the origin of the thermal alterations at Cueva Negra. Detailed geoarchaeological and geomorphological studies have been brought to bear and suggest they may be anthropogenic, although more extensive excavations and additional sampling are needed to confirm this.

The lower Paleolithic archaeology of North Africa is potentially of importance to understanding the peopling of the Iberian Peninsula. It is not at all certain, however, that early hominids traveled across the strait. The earliest known site is Ain Hanech, in northeast Algeria.³² No hominins have been found at the site, but fauna (Lower Villafranchian) and Oldowan tools

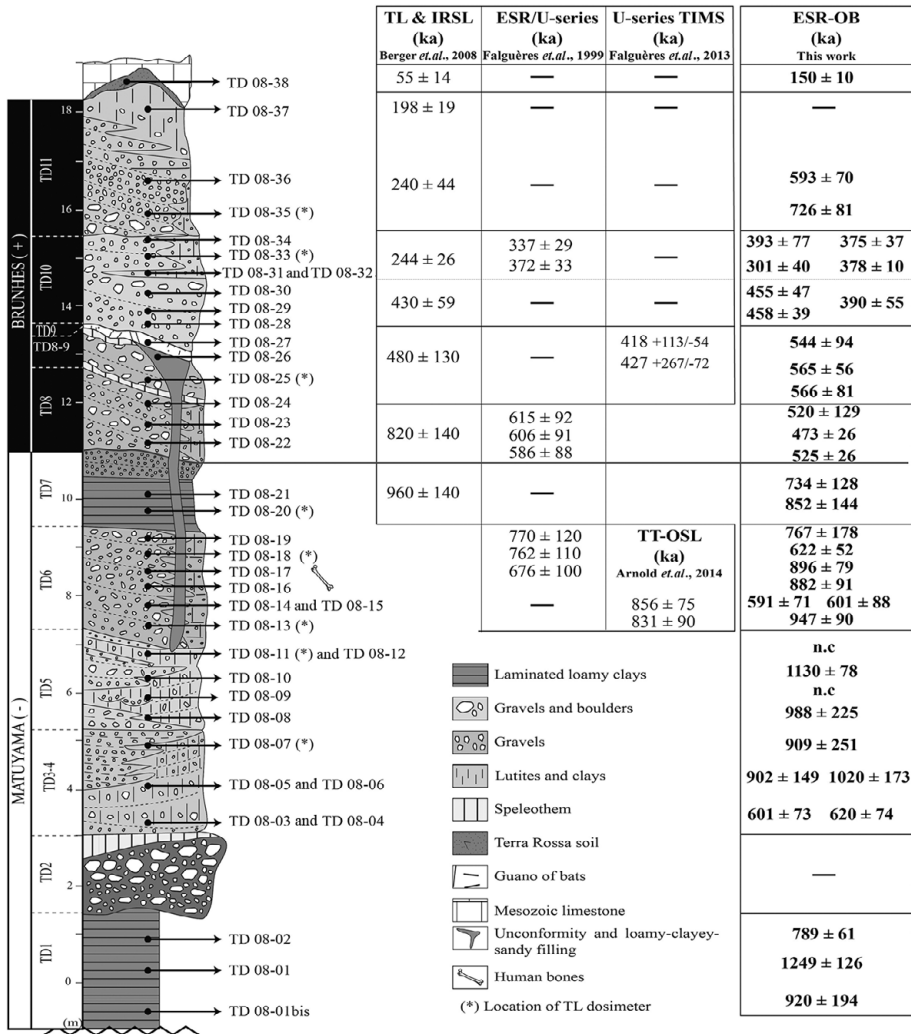


Figure 2.7 Gran Dolina stratigraphy. IRSL, infrared stimulated luminescence; OB, optically bleached; OSL, optically stimulated luminescence; TD, Trinchera Dolina; TIMS, thermal ionization mass spectroscopy; TT, thermally transferred.

From: Moreno *et al.* 2015, fig. 2

(choppers, flakes, and denticulates) were recovered in largely undisturbed contexts (Figure 2.9), which were dated paleomagnetically and paleontologically to 1.8 mya. El-Kherba, located near Ain Hanech, is associated with similar finds and viewed as contemporary with Ain Hanech.

The Middle Pleistocene: 800–125 kya

Evidence for hominin occupation in the Middle Pleistocene in Iberia is scarce. Paleoenvironmental studies indicate that the peninsula was generally temperate



Figure 2.8 El Niño de la Gran Dolina.

Photo: Javier Trueba/Courtesy Science Photo Library

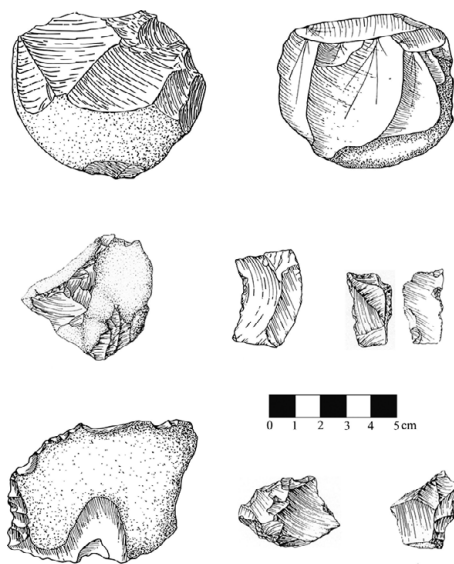


Figure 2.9 Oldowan stone tools from Ain Hanech.

From: Sahnouni *et al.* 2002, fig. 5

and humid with open landscapes, with differences between glacial and interglacial episodes less marked than Northern Europe.³³ The lithic industry was Acheulean (mode 2), with those sites preserving the largest number of Acheulean tools found in fluvial deposits of rivers on the Atlantic side of the peninsula, often without associated fauna. Some argue that this is possible evidence for crossing of the Strait of Gibraltar.³⁴



Figure 2.10 Sima de los Huesos.

Photo: Javier Trueba/Courtesy Science Photo Library



Figure 2.11 Excalibur hand axe from Sima de los Huesos.

Photo: Javier Trueba/Courtesy Science Photo Library

One of the richest sources of information for the Middle Pleistocene is the cave of Sima de los Huesos, another locality in the Atapuerca Range.³⁵ Located at the bottom of a 13 m shaft, Sima de los Huesos is best known for its large and well-preserved assemblage of hominins – totaling at least twenty-eight individuals (Figure 2.10). Indeed, it contains the largest number of Middle Pleistocene hominin remains found anywhere in the world. These fossils were closely associated with fauna, including cave bear (*Ursus deningeri*) and fox, and one Acheulean hand axe (nicknamed Excalibur) (Figure 2.11),

discovered in 1998. The biface was made from red quartz and dated to 430 kya using a combination of methods. Many questions surround the finds. One of the most intriguing is how these hominins (and fauna) got to be at the bottom of the deep vertical shaft. Some archaeologists argue that they accidentally fell into the shaft in a catastrophic event,³⁶ while the excavators hypothesize that the evidence more strongly suggests a human burial, with the hand axe being a grave good.³⁷ If a burial, it would be the oldest human burial known in the world. The evidence supporting a catastrophic event (or a set of different taphonomic processes) includes the mortality pattern of the hominins (no infants, children, or old people, and a large number of adolescents and prime-age adults). The evidence supporting a burial includes the presence of the hand axe (and lack of other lithic debitage) and the absence of herbivores (precluding the use of the site as a den for the carnivores). Forensic studies point to perimortem trauma on some of the crania and, thus, to the possibility of violence accounting for at least some of these individuals' deaths.³⁸ Another point of contention is the hominin designation of the individuals and their relationship to *Homo erectus*, Neanderthals, Denisovans, and modern humans. The excavators have proposed their traits are attributable to *H. heidelbergensis*. Researchers at the Max Planck Institute and a team of colleagues sequenced the oldest mtDNA (mitochondrial DNA) of one of the individuals, which showed Neanderthal-like skeletal features; yet, genetically it appears to have shared a common ancestry with Denisovans, who lived from Siberia to Southeast Asia at the time of Neanderthals.³⁹ More recently, however, nuclear DNA studies suggest they were related to Neanderthals, not Denisovans.⁴⁰

In addition to Sima de los Huesos, investigations at two other Middle Pleistocene sites have provided insights into hominin behavior, and perhaps just as importantly, a window into the changing methods and practices in Paleolithic archaeology over the 100 years, particularly with respect to the increasing importance of taphonomic studies. These are Torralba and Ambrona (Loma de los Huesos), two extensive open-air sites located 3 km from each other in a lacustrine basin in Soria, northern Spain.⁴¹ In 1888, construction on the Torralba railway station exposed a set of large elephant bones. Following this discovery, Enrique de Aguilera y Gamboa, the 17th Marqués de Cerralbo, excavated Torralba between 1909 and 1913, which he followed up with the larger site of Ambrona from 1914 to 1916. After a lapse during the Spanish Civil War, excavations resumed under the direction of F. C. Howell, who worked at both sites between 1961 and 1963, and between 1980 and 1983 with Leslie Freeman.⁴² Santonja and Pérez-González continued work in the 1990s through to the 2000s. The presence of large numbers of animal bones, primarily elephant, but also horse, and Acheulean stone tools led Howell and his team to infer, as did Cerralbo, that they represented contemporary sites where *H. erectus* hunted elephants and other game, such as equids,

bovids, and cervids, with spear points and butchered them. They also recognized, however, that carnivores, such as lions, played a role in the faunal assemblage as scavengers. Later work has undermined a number of these conclusions. Butzer's original determination that the two sites were situated on the same morphosedimentary unit⁴³ – the Torralba formation – was revised after later geomorphological and chronometric studies.⁴⁴ These studies showed that the sites were actually located in different stratigraphic levels of the Rio Masegar valley and that Ambrona dated to ca. 400–350 kya, while Torralba to ca. 200 kya. The principal focus of debate, however, surrounds the degree of postdepositional disturbance at the sites, which factor into how we can interpret the distribution of finds, particularly in assessing the degree to which the site was formed by cultural processes, such as hunting and butchering. For example, Shipman and Rose used the scanning electron microscope to analyze replicas of over hundred features deemed to be the strongest candidates for butchery cut marks from both sites,⁴⁵ but only 1 percent showed verifiable cut marks. All, however, had evidence for sedimentary abrasion, which might have obliterated any cut marks that existed. Binford's analyses of the association between different fauna and stone tools at Torralba suggested that hominins there did not engage in elephant hunting, but were involved in scavenging or natural processes.⁴⁶ Additional challenges were directed at interpretations of the ivory points that Howell and Freeman saw as intentionally fashioned;⁴⁷ Villa and d'Errico's reanalyses concluded that they were not intentionally sharpened,⁴⁸ and that hominins at that time did not make points from bone, in contrast to later hominins.

Unlike Torralba, the picture at the Middle Pleistocene site of Áridos, near Madrid, does suggest organized exploitation of elephant, although still not hunting.⁴⁹ In order to evaluate the degree to which *H. erectus* from Áridos, Torralba, Ambrona, and Atapuerca were involved in planning behavior related to stone procurement, Mosquera analyzed the raw materials and stone tool types from these sites.⁵⁰ Her study showed that there were patterns between the raw materials used and the forms/functions of the tools, suggesting that *H. erectus* was involved in planning and forethought and not in opportunistic use of raw materials.

The Almonda karstic system in Portugal is another rich source of evidence for Lower and Middle Paleolithic hominids (see Gruta de Oliveira, mentioned later). At one of the caves – the Gruta da Aroeira – Acheulean bifaces, fauna, and three hominid remains were recovered, including a cranium, which were found in association with fauna and lithics. U-Th (uranium-thorium) dates on calcitic crusts that formed on the cranium were dated to ca. 400 kya.⁵¹ The Aroeira cranium is the oldest hominid fossil in Portugal to date. It shares features with other Middle Pleistocene crania (such as from Bilzingsleben, in eastern Germany) but also has distinctive traits (such as a raised articular eminence) (Figure 2.12).

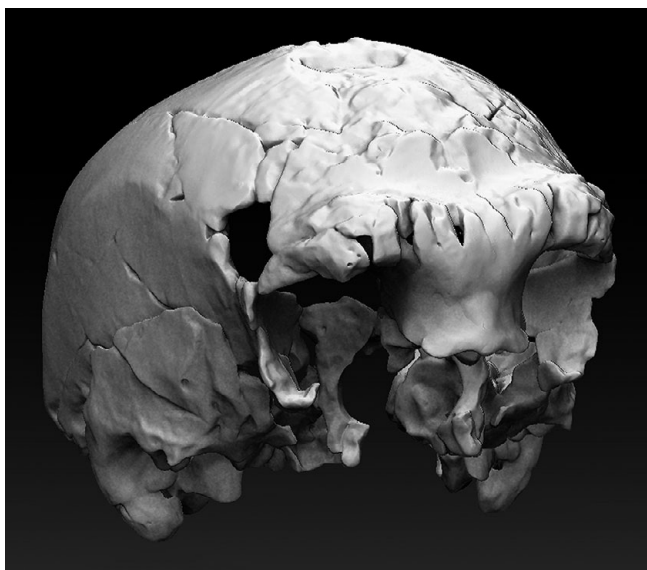


Figure 2.12 Virtual reconstruction of Aroeira 3 cranium.

From: Daura *et al.* 2017, fig. S5

LATE PLEISTOCENE/MIDDLE PALEOLITHIC (125–40 KYA): THE FIRST NEANDERTHALS

During the Late Pleistocene/Middle Paleolithic, the Iberian Peninsula was home to Neanderthals. As in other regions of Europe and Southwest Asia, Iberian Neanderthals fashioned Mousterian tools made from flint and quartzite. No solid evidence for intentional burials is known from Iberia, although sites with articulated remains, such as Sima de las Palomas in Murcia, could well represent burials. Iberia is distinctive because Neanderthals continued living there, at least south of the Ebro River valley, longer than elsewhere in Europe. A modern human child discovered at Lapedo, Portugal, in 1998 provided some of the first indications that Neanderthals and modern humans interbred. Archaeological evidence from Iberia also increasingly suggests that Neanderthals were behaviorally modern and made art, typically considered the unique domain of modern humans.

Settlement, Climate, and Demography

Late Pleistocene sites in Iberia are known from a range of settings, including caves, rock-shelters, and open-air sites situated along the coast and riverways (or along fluvial terraces) and in the interior.⁵² Archaeologists, however, continue to find evidence for Neanderthal occupations in new environmental settings. For example, Abrigo del Molino is the first site found in the karstic plateau of northern Iberia.⁵³ Climatically, the Late Pleistocene spans the

MIS 5–3. The extensive karstic systems and their preservational qualities as well as the milder temperatures of the Late Pleistocene made the peninsula an attractive place for hominins. More sites are known from the Late Middle Paleolithic, between 60,000 and 40,000 BP (MIS 3), than from the Early Middle Paleolithic.⁵⁴ Some have posited that this was due to a demographic increase, although it has been questioned why the earlier milder period (MIS 5) is so poorly represented archaeologically. Multi-proxy investigations at Cueva Antón, a rock-shelter in a fluvial environment, suggest that this apparent absence may be due to archaeologists' overreliance on karstic sites for their understanding of the Middle and Upper Paleolithic.⁵⁵ Evidence from the deep deposits at the site, which date from MIS 5 through 3, suggest that, during milder conditions, woodland forests would have expanded, making karstic caves and rock-shelters less attractive or visible to hominins. Sedimentary dynamics may also be at play. In milder and wetter climatic periods, vegetation would have fixed the soils on slopes, slowing down accumulation of deposits in caves and exposing preexisting deposits to more erosion. In contrast, in colder or more arid periods, erosion along slopes would produce more sediment that gets into caves and rock-shelters; thus, thicker deposits would be formed and archaeological materials better preserved and have better chronological resolution.

Middle Paleolithic sites have been identified across the Strait of Gibraltar, although most archaeologists do not believe there to have been interactions, or significant interactions, between Neanderthals on both sides of the strait. The cave site of Benzú, for example, has levels dated by optically stimulated luminescence (OSL) and TL to between 250 and 70 kya, which were associated with Mode 3 tools and fauna.⁵⁶

Lithic Technologies

Neanderthals in Iberia produced a range of flake tools using diverse raw materials and production sequences.⁵⁷ These tools included flakes, side scrapers, cleavers, and points (Figure 2.13). Bifaces found at some Middle Paleolithic sites in France and Northern Europe are absent in Iberia. Because archaeologists have used different nomenclatures to describe stone tool types throughout the peninsula, it is often difficult to compare assemblages with each other and generate overall summaries.⁵⁸ Most of the stone used was local and included flint, quartzite, quartz, mudstone, and limestone.⁵⁹ However, in eastern Cantabria, some tools have been found at sites sourced to areas over 30 km away. At El Cañaveral, in central Spain, evidence for the exploitation of the local flint outcrops was found, as well as hearths and debitage.⁶⁰ Raw material selection was likely due to a variety of factors, including a group's mobility and the tool's function. A diversity of reduction sequences has been

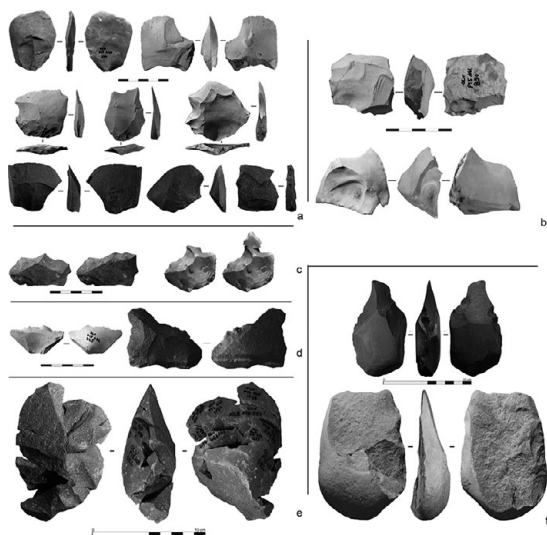


Figure 2.13 Middle Paleolithic lithics.

From: Deschamps and Zilhão 2018, fig. 14

documented, which may be related to distance to sources. The most widely used sequences were the Levallois prepared-core, Discoidal, and Quina methods. The Quina sequence has, however, only been documented in northern Spain and at some sites in eastern Mediterranean Spain. At Arlanpe Cave, in eastern Cantabria, tools were produced using the *Système par surface de débitage alterné* (SSDA; alternating surfaces flaking system).⁶¹ Overall, ramification – or the creation of flakes to be used as cores to produce new flakes in a process of recycling – was a key element in Neanderthal tool production. Such a behavior represents depth planning and the ability to make and use small tools.

As throughout Europe, Iberianists have debated whether the variability of Middle Paleolithic tools was due to ethnicity, function, or their use-lives,⁶² although investigations now focus on production sequences and knapping techniques and less on typologies. A comparative study of Late Middle Paleolithic assemblages from sites in northern and eastern Spain found that variability in small tool production sequences relates to the proximity of raw materials.⁶³ Where raw material is locally available, as at Quebrada, a Levallois sequence was employed; where it is more distant, such as at Axlor and Amalda, tools were made using the process of ramification. Barton compared the edge morphologies of retouched tools from four Spanish Middle Paleolithic sites and determined that, across tool types, edge morphologies were continuous and unimodal, suggesting the Mousterian tools were multifunctional; otherwise more significant differences would have been noted.⁶⁴ To investigate whether there was directional change in lithic technologies over time, de la Torre *et al.*⁶⁵ compared the assemblages from Tragó, Roca dels Bous, and

Cova Gran – three rock-shelters in the region of La Noguera, in Catalonia. They found, however, no directional patterns, but this may also be due to the small sample size.

Subsistence

The available evidence for Neanderthal diet in southeast Iberia, drawing on faunal, isotopic, and use-wear studies, demonstrates, most importantly, that the diet of Neanderthals in colder and more northerly regions of the Eurosiberian zone was different than those in Iberia.⁶⁶ For example, some large mammals that went extinct in Northern Europe before MIS 5, such as hippopotamus (*Hippopotamus amphibius*), elephant (*Palaeoloxodon antiquus*), or rhinoceros (*Stephanorhinus hemitoechus*), continued to be present in Iberia and were hunted. Furthermore, there is a higher carnivore:ungulate ratio at Iberian sites than in more northerly zones. In general, and despite variability of space and time, Neanderthals hunted a wide variety of medium- and large-bodied animals, such as aurochs, rhinoceros, horse, red deer, and ibex. They also hunted small game, such as rabbit, as well as exploited marine resources. Much less is known of the plant foods they ate. The forests in Mediterranean Iberia would have provided high-energy plants, such as hazelnuts. A study of plant microfossils recovered on stone tools and teeth show the consumption of grasses. Isotopically, Neanderthals seem to have relied primarily on terrestrial proteins.

A comparison of lithic and faunal resources exploited by Neanderthals between the cooler MIS 4 and milder MIS 3 suggests that territories contracted over this span. That is, when conditions were cooler, they had to hunt and forage over larger territories to support their populations; during warmer periods, these territories shrunk.⁶⁷

Some scholars argue, however, that Neanderthal hunting patterns did not differ much from those of early modern humans of the Upper Paleolithic of Iberia and that intensification, as defined by using lower ranked resources, was in place by the Late Middle Paleolithic.⁶⁸ However, this measure of intensification is not shared by all archaeologists, who suggest that intensification, at least in Mediterranean Spain, occurred much later, during the Pleistocene–Holocene transition.⁶⁹

Site Structure and Non-Lithic Technologies

A window into Neanderthals' use of space and organic resources was discerned through the extensive excavations at Abric Romaní, in northeast Spain.⁷⁰ The wide rock-shelter, whose occupation area covers over 300 m², is situated at elevation of 265 masl and overlooks the narrow gorge of the Anoia River, which provides passages between the coast and interior and would have been



Figure 2.14 Wooden tool (digging stick?) from Aranbaltza (before and after conservation).

From: Rios-Garaizar *et al.* 2018, fig. 4; <https://creativecommons.org/licenses/by/4.0/legalcode>

an optimal location for observing seasonal migrations. Its stratigraphy is made up of 20 m of deposit, which is comprised mainly of Middle Paleolithic levels that represent twenty-five occupational events of different durations, separated by travertine. These were dated by uranium series to between 70 and 40 kya.⁷¹ Hearths were found in each archaeological layer, which displayed a range of forms and were analyzed by microfacies analyses.⁷² Coniferous woods (*Pinus sylvestris*) made up the primary fuel,⁷³ but an allochthonous source was also detected.⁷⁴ Wooden objects dated to 49,000–45,000 BP were also found.⁷⁵ They are irregularly shaped (one was as large as $55 \times 20 \times 2 \text{ cm}^3$), charred, and closely associated with hearths and burnt animal remains. One could be identified as made from *Juniperus*. Their function is unclear, although they may have been used to carry food, shovel embers/ashes, or remove water from the flooding that occurred during the site's use. Although these are not the only examples of wooden implements dated to the Middle Pleistocene (for example, a shaft made of yew more than 2 m long was found at Lehringen, Germany), their form appears to be unique, to date.

At the Middle Paleolithic open-air site of Aranbaltza III in northern Spain, another wooden tool was found, which was pointed and had wear traces consistent with its use as a digging stick (Figure 2.14).⁷⁶ It came from Unit 4, which was dated by OSL to a minimum age of $70.0 \pm 8.4 \text{ ka}$. It is the oldest wooden tool known in Southern Europe. It was made from yew (*Taxus baccata*), which is a wood often used in woodworking because of its durability and flexibility.

At the open-air site of Vilas Ruivas, situated on the Quaternary terraces along the Tejo River, two stone arc-shaped structures were found. They have been interpreted as windbreaks to protect the hearths, or, given the low



Figure 2.15 Neanderthal skull from Forbes' Quarry, Gibraltar (cast).

Photo: Courtesy of S. Finlayson

density of lithics found in association with them, as hunting blinds.⁷⁷ The site was TL-dated to $54,000 \pm 12,000$ – $11,000$ BP.

Iberian Neanderthals

In 1848, Captain Edmund Flint of the Royal Navy found the first Neanderthal in Iberia – a cranium of a female – at Forbes' Quarry, Gibraltar (Figure 2.15). This was only the second Neanderthal individual known in Europe following the discovery in 1829 of a Neanderthal child in Engis, Belgium. These early finds were not recognized as a new species, however, until the discoveries at Feldhofer Cave in the eponymous Neander Valley, Germany in 1856.⁷⁸ In 1887, Pere Alsius i Torrent (1839–1915), a pharmacist and prehistorian, discovered what was thought to be the second Neanderthal fossil in Iberia – a mandible in a quarry in Bañolas.⁷⁹ A recent study of its morphological traits, however, suggests that the mandible is from a modern human.⁸⁰

Since then, more than thirty sites in Iberia have been identified with well-dated and contextualized Neanderthal fossil remains.⁸¹ Those most recently investigated include Sima de las Palomas del Cabezo Gordo, El Sidrón, Bolomor, Cova Negra, Cova Foradà, Pinilla del Valle, Valdegoba, Cova del Gegant, and Almonda. Most of the remains are isolated teeth and cranial fragments, although a few are articulated skeletons that suggest burials, such as those from Sima de las Palomas. Most date to MIS 3, which may indicate that there was a demographic expansion in Iberia at that time, or perhaps there are sampling biases.⁸²

Because most Iberian Neanderthal finds are isolated cranial and dental remains, our understanding of their postcranial morphology is relatively poor.

For this reason, the individuals (which total at least nine) from Sima de las Palomas del Cabezo Gordo have contributed valuable insights into the overall morphology of Iberian Neanderthals and South Europeans, in general.⁸³ Palomas 96, the articulated partial skeleton of a young adult female is particularly significant. Other than Palomas 96, which was discovered in 2006 and 2007, the only other skeleton in Mediterranean Europe with all limbs and shoulder girdles well preserved is La Ferrassie 1 in France. In general, Neanderthals, wherever found, display appendicular hypertrophy – or robust arms and legs, and this is the case with Palomas 96. But Neanderthals also exhibit variability, as with all hominins. Palomas 96 is one of the shortest of the Neanderthals known in Europe, and some aspects of her dentition and hands are distinctive. Most surprisingly, however, her body proportions are indistinguishable from those of North European Neanderthals. This suggests that there are factors other than, or in addition to, climate that structured the morphology of Neanderthals.

The largest number of Neanderthal finds in Iberia, to date, were found deep in El Sidrón Cave.⁸⁴ The site has been studied using a full range of analytical techniques, revealing a rare picture of Neanderthal lifeways. Spanish Republican fighters used the cave as a hiding place during the Civil War, so, when spelunkers discovered two mandibles in the cave in 1994, they presumed they were those of soldiers. The Forensic Anatomical Institute carried out the first excavations, and later, beginning in 2000, a team of archaeologists took over, focusing on the area of the cave known as the Galeria del Osario. Over 2,550 bones of at least 13 Neanderthal individuals, including adults, adolescents, and children, as well as males and females, were recovered.⁸⁵ Different methods and samples were used for dating the site. Some yielded recent dates (ca. 40,000 BP), situating El Sidrón squarely in the debate about the (late) endurance of Neanderthals in Iberia, and northern Iberia, in particular, while others returned older dates, ca. 49,000 BP. Given that more sophisticated protocols were used for the older dates, these are currently favored.⁸⁶ Approximately 350 flaked tools were also found. They were largely made from flint (*silex de Piloña*) and quartzite, sourced to within a 5 km radius of the site and made using the Discoidal and Levallois methods. About 16 percent of the stone tools could be refitted, as well as some of the human remains, which points to the unity of the assemblage recovered in the Osario. One of the key questions addressed by the investigators was how these remains come to be found inside the cave: Were they a burial or were they a secondary deposit, originating from outside the cave? Geomorphological studies of the deposits where the archaeological materials were found indicated that they were a secondary deposit from outside the cave, which entered the cave in a collapse event. Studies of the mtDNA and nDNA of most of the El Sidrón individuals were carried out, and these pointed to close biological affinities. All the males were from the same lineage, while the females were from different ones, suggestive of patrilocality. The genome of an adult

male was sequenced and found to have a Y chromosome not found in modern humans, suggesting that this lineage is extinct.⁸⁷ Another intriguing result of the work at El Sidrón is evidence for cannibalism in the form of cut marks on many of bones, apparently to extract marrow. Studies of the dental calculus on some of the teeth identified fiber and coniferous wood, indicating that their teeth were sometimes also used as tools.⁸⁸ All of the individuals had dental hypoplasia, pointing to dietary stress in their lives.⁸⁹ Some fauna were recovered from the site, but they are few and have carnivore marks, indicating that they were not the food of the Neanderthals.

Neanderthal Art

Perhaps the most intriguing discovery in Iberian Neanderthal archaeology in recent years has been evidence for symbolic behaviors, such as art, that had been viewed as unique to modern humans. In some ways, this should not be surprising, given what is known about Neanderthal burials in other parts of the world, such as at Shanidar Cave, Kebara, and La Ferrassie.⁹⁰ Given that much of the research and rethinking of Neanderthal symbolic behavior has taken place in just the past decade, this is likely an area of research that holds a great deal of potential for exciting discoveries in the future. The evidence in Iberia is reviewed in approximate order of their discoveries, given that the most convincing cases represent the most recent research.

Perforated marine shells were found at Cueva de los Aviones, in Murcia, in levels dated to 50,000 BP – nearly 8,000 years before AMH arrived in Europe.⁹¹ At the site, the excavators recovered perforated shells of *Acanthocardia tuberculata* (rough cockle) and *Glycymeris insubrica* (saltwater clam) (Figure 2.16). Although the perforations on these shells are likely to be natural,

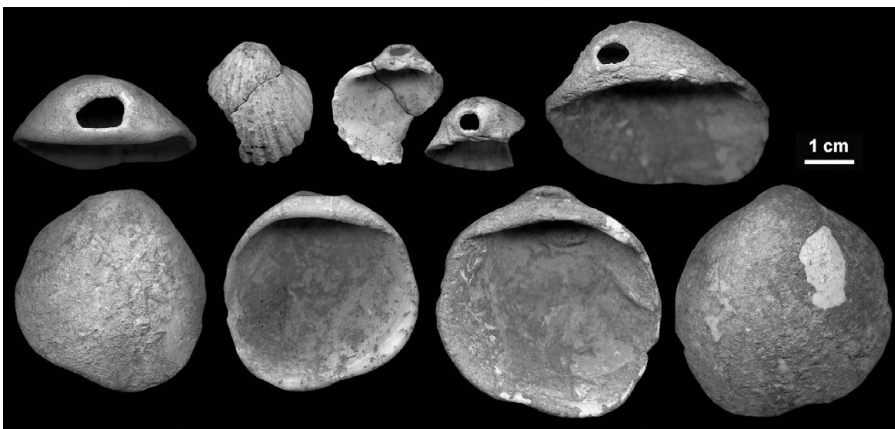


Figure 2.16 Perforated shells from level II of Cueva de los Aviones.

From: Zilhão *et al.* 2010, fig. 1

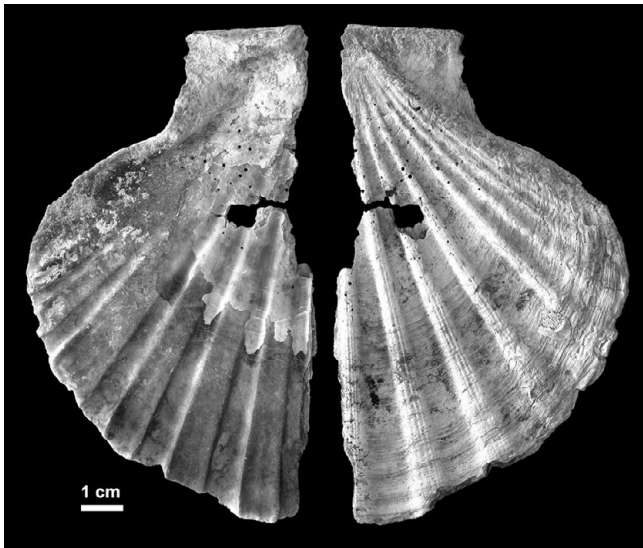


Figure 2.17 Perforated shell from Cueva Antón.

From: Zilhão *et al.* 2010, fig. 4

naturally perforated shells were used as pendants in other European Middle Paleolithic and African Middle Stone Age sites. Thus, the excavators argue that these perforated shells must also be considered as pendants or beads. One of the *Spondylus gaederopus* (spondylus) shells found had traces of red natural pigments mixed with charcoal, hematite, and other materials. Lumps of red and yellow mineral pigment were also recovered at the site, which could only have been brought there. At Cueva Antón, also in Murcia and dated to 38–39 kya, a shell of *Pecten maximus* was partially covered in an orange colorant made of goethite and hematite (Figure 2.17). However, its later date situates it at the Neanderthal/AMH contact period in southern Iberia, so its association with Neanderthals is less certain.

The first compelling case for Neanderthal cave art was brought forward after scientists conducted uranium series dating of calcite that covered painted art at eleven caves, including Altamira, El Castillo, and Tito Bustillo, all in northern Spain.⁹² The dating returned minimum ages of 40.8 ka for a red disk from El Castillo, 37.3 ka for a hand stencil also from El Castillo, and 35.6 ka for a claviform-like symbol from Altamira (Plate 1). These results, particularly the red disk from El Castillo, raised the possibility that cave art was produced by Neanderthals, although, with these dates, AMH could have been the authors.

At Gorham's Cave, Gibraltar, an engraved cross-hatch ("hashtag") was found in the bedrock of the cave covered by Middle Paleolithic levels dated to 39,000 BP (Figure 2.18).⁹³ Therefore, these engravings are considered to be older than 39,000 BP. At the cave and at other Middle Paleolithic contexts from Gibraltar (Vanguard and Ibex Caves), evidence was also recovered for the

(a)



(b)



Figure 2.18 (a) View of the Gorham's Cave Complex, UNESCO World Heritage Site. (b) “Hashtag” image found in Gorham's Cave Complex.

Photos: Courtesy of S. Finlayson

disproportionate frequency of bird bones – specifically corvids and raptors – associated with feathers, rather than meat.⁹⁴ Thus, it was proposed that Neanderthals used bird feathers for decoration or other symbolic purposes.

In 2018, another dating study provided additional evidence that Neanderthals painted cave walls.⁹⁵ In this project, paintings from caves in northern, central, and southern Spain were dated by U-Th, providing the minimum age for the underlying images. The dated images were a red “ladder-like” image from La Pasiega (Figure 2.19), a hand stencil from Maltravieso, and a red-painted speleothem from Ardales. For all three sites, minimum ages of 64.8 kya were returned for the art. This predates the arrival of AMH in Europe by at least 20,000 years. As the authors of this study noted, “We . . . expect that cave art of Neandertal origin will eventually be revealed in other areas with Neandertal presence elsewhere in Europe.”⁹⁶ Some scholars have challenged

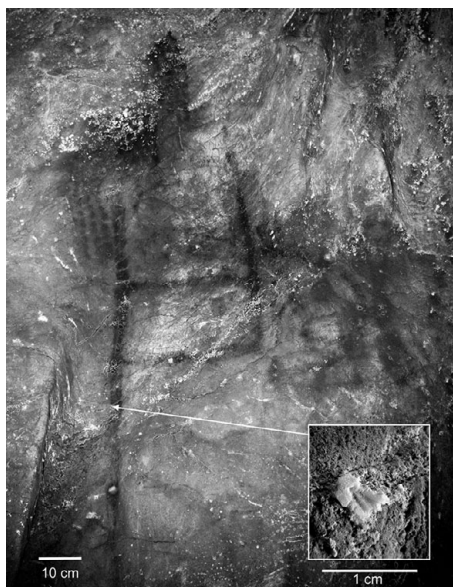


Figure 2.19 Scalariform (“ladder”) image from La Pasiega.

Photo: J. Zilhão, from Hoffman *et al.* 2018a, fig. 1

the reliability of these dates, however, citing methodological problems.⁹⁷ Debate continues and will likely continue into the future.⁹⁸

The Ebro Frontier and the Last Neanderthals

Understanding the process by which AMH came to replace Neanderthals is one of the central questions in paleoanthropology. Given the increase in compelling evidence for Neanderthal behavioral modernity, archaeologists can no longer explain the disappearance of Neanderthals through the cultural or biological superiority of AMH. The Iberian Peninsula is a key region for understanding the replacement of AMH as Neanderthals persisted longer in at least southern Iberia than anywhere else in the world.

To explain the dynamics of cultural and biological changes during the Late Middle Paleolithic in Iberia, and, specifically, the regional variation in lithic assemblages noted by some scholars,⁹⁹ Zilhão proposed the Ebro frontier model¹⁰⁰ (Figure 2.20). According to this model, the area north of the Ebro River followed the general European pattern of cultural and biological evolution, due in large part to its similar steppic-tundra environment. In the north, the Middle to Upper Paleolithic transition, marked by the appearance of Proto- and Early Aurignacian assemblages presumably associated with the first AMH (although no human remains of the period have yet been found), occurred ca. 42,000 cal BP. To the south of the Ebro, with its more temperate and wetter climate, Neanderthals producing Middle Paleolithic technologies



Figure 2.20 Ebro frontier model, southward of the Ebro biogeographic boundary, persistence of the Mousterian after ca. 41.5 cal (ca. 36.5 14C) ka.

Adapted: J. Zilhão

survived for several millennia longer. There, they were replaced by AMH using Evolved and Late Aurignacian tools ca. 35,000 cal BP. In this scenario, Neanderthals and AMH coexisted for ca. 7,000 years in Iberia.

The Ebro frontier model underwent critique and revisions.¹⁰¹ There were problems with the dating of many sites used to develop the model. Most had been radiocarbon dated, but suffered from pretreatment contamination problems, which tend to produce more recent dates. Thus, a project was undertaken to use more rigorous protocols to remove contamination of samples and redates them by accelerator mass spectrometry.¹⁰² The study concluded that most of the dates for south Iberian sites previously used to support a late survival of Neanderthals are problematic.

There remain, however, sites with late dates (post-42,000 cal BP) in southern Iberia, indicating that Neanderthals and modern humans did coexist there for some thousands of years, although the degree to which they interacted is unclear. The youngest and most securely dated diagnostic fossils of Neanderthals come from just a few samples. One of these is Gruta da Oliveira 1 in the Almonda karstic system of Portugal, dated to 43,500 cal BP.¹⁰³ Other late dates for Iberian fossils come from several mandibles from Sima de las Palomas (49, 59, 80, and 88), dated to 43,000–40,000 cal BP.¹⁰⁴ Other sites lack Neanderthal remains but have Late Middle Paleolithic assemblages. At the Mousterian

open-air site of Foz do Enxarrique, uranium series dates on animal bones returned dates between 34.8 ± 1.3 and 38.5 ± 1.6 ka.¹⁰⁵ The latest Mousterian level at Cueva Antón – layer I-k – cannot be older than 37,100 cal BP.¹⁰⁶ In Gibraltar, at Gorham's Cave, Mousterian levels were dated to as recently 36,000–37,800 cal BP.¹⁰⁷

The current evidence for the transitional period between 50,000 and 30,000 cal BP suggests a mosaic of cultural histories, which was not only varied between the north and south of the peninsula, but was patchy within these regions. In the north, the transition appears to have been more rapid, and AMH and Neanderthals overlapped for less than 1,000 years.¹⁰⁸ In the south, Neanderthals and AMH coexisted for up to 6,000 years, in “a long and diffuse spatio-temporal mosaic involving populations at low density.”¹⁰⁹ The ultimate demise of the Neanderthals in southern Iberia may be the result of habitat fragmentation during warm periods, which would have affected birth rates and intensified the impact of stochastic events.¹¹⁰

These recent findings have led to a suite of other models to understand the process in Iberia, which include the extinction of Neanderthals and arrival of AMH as independent events, the contemporaneity of Neanderthals and AMH in different regions of Iberia, and the idea that the Upper Paleolithic/Aurignacian developed locally out of the Middle Paleolithic.¹¹¹ As more sites are discovered, excavated, and more precisely dated, there is no doubt that the picture will both be clarified as well as more complicated, given the size and diverse environments of Iberia. While it is certain that the Ebro was an important biogeographic divide, its role as an obstacle to mobility and cultural diffusion is not clear. The fact that this crucial transition took place at the lower limit of radiocarbon dating has added further challenges to its explication.

SOME CONCLUSIONS

The cultural and biological history of the Iberian Peninsula during the lower and Middle Paleolithic is complex, and many gaps in our understanding remain, given the vast span of time involved and gaps in regional knowledge. Future research will, no doubt, produce some clarification to these histories and our understanding of human lifeways, but will also likely generate some surprises. That the earliest dates for hominin occupation, at ca. 1.4–1 mya, are currently from sites in southern Iberia (Guadix-Baza Basin) and the similarity of technologies, particularly Mode III/Mousterian lithics, found on both sites of the strait¹¹² point to the possibility that there was movement of hominins between North Africa and the peninsula, at least at some moments during this span of time. Further research, as is being carried out by scientists at the University of Cadiz and at institutions in Tetuán and Rabat to produce an archaeological map of north Morocco, may generate evidence needed to

better understand whether or not there was such movement, to what degree, and what its impact was.¹¹³ Given that the milder conditions of the peninsula could support higher densities of animal, plant, and human life during the Pleistocene than Northern Europe, it was certainly not a peripheral zone, but a core zone for human life at the time.

ENDNOTES

- 1 Estévez and Vila 1999, 2006.
- 2 In this book, I use the term “AMH” to indicate hominins with a suite of anatomical characteristics that are considered “modern.” However, there have long been behavioral and genetic baselines for the concept of modernity. Furthermore, it is currently understood that these variables (anatomy, behavior, genetics) do not necessarily co-occur nor are necessarily related causally.
- 3 One notable synthesis is Sala Ramos *et al.* 2014.
- 4 Agustí *et al.* 2010.
- 5 Loget and van den Driessche 2006. The strait was opened in the Early Pliocene (5.3 mya), although whether by tectonic activities or fluvial erosion is debated.
- 6 For the Quaternary, and the Paleolithic in particular, climate phases are generally denoted by their marine isotope stage (MIS). MISs are based on oxygen isotopes derived from pollen and foraminifera from deep-sea sediment cores, with MIS 1 representing the most recent stage. Even-numbered MISs have high levels of ¹⁸O and denote cold glacial periods, while odd-numbered stages are troughs in ¹⁸O and represent warm interglacials (Lisiecki and Raymo 2005).
- 7 Dennell 1983:21–39; Roebroeks and van Kolfschoten 1994.
- 8 Dennell 2003.
- 9 Roebroeks 2006.
- 10 Cardoso and Penalva 1979.
- 11 Barsky *et al.* 2010; Toro Moyano *et al.* 2010, 2011, 2013.
- 12 Lozano-Fernández *et al.* 2015.
- 13 Blain *et al.* 2016.
- 14 Ribot *et al.* 2015.
- 15 Barsky *et al.* 2010; Toro Moyano *et al.* 2010, 2011; Lozano-Fernández *et al.* 2015.
- 16 Blain *et al.* 2016.
- 17 Patrocínio Espigares *et al.* 2013.
- 18 Patrocínio Espigares *et al.* 2013.
- 19 Gibert *et al.* 1983.
- 20 Moyà-Solà and Köhler 1997; Palmqvist 1997. Carandell Baruzzi (2013) discussed the politics of this controversial find, whose significance and

interpretation were played out in the popular Spanish press before thorough scientific vetting.

- 21 Carbonell Roura *et al.* 2014.
- 22 Marcos-Sáiz and Díez Fernández-Lomana 2015.
- 23 Rosas *et al.* 2006a; Carbonell Roura *et al.* 2014.
- 24 Bermúdez de Castro *et al.* 2011; Lorenzo *et al.* 2015.
- 25 Martínez *et al.* 2010.
- 26 Carbonell Roura *et al.* 1999, 2014.
- 27 Bermúdez de Castro *et al.* 2017.
- 28 Fernández-Jalvo *et al.* 1999.
- 29 Allué *et al.* 2015.
- 30 Angelucci *et al.* 2013; Walker *et al.* 2013, 2016; Rhodes *et al.* 2016.
- 31 Walker *et al.* 1999.
- 32 Sahnouni 1998; Sahnouni *et al.* 2002.
- 33 Enamorado 1997:50.
- 34 Santonja and Pérez-González 2010.
- 35 Arsuaga Ferreras *et al.* 1997; Bischoff *et al.* 2003; Carbonell Roura *et al.* 2003, 2014.
- 36 Rabadà i Vives 2015.
- 37 Arsuaga Ferreras *et al.* 1997; Carbonell Roura *et al.* 2003.
- 38 Sala *et al.* 2016.
- 39 Meyer *et al.* 2014.
- 40 Meyer *et al.* 2016.
- 41 Santonja *et al.* 2014.
- 42 Howell 1965; Freeman 1994.
- 43 Butzer 1965.
- 44 Pérez-González *et al.* 2001; Santonja *et al.* 2005.
- 45 Shipman and Rose 1983.
- 46 Binford 1987.
- 47 Howell and Freeman 1983.
- 48 Villa and d'Errico 2001.
- 49 Villa 1990.
- 50 Mosquera Martinez 1998.
- 51 Daura *et al.* 2017.
- 52 Enamorado 1997:36–38.
- 53 Álvarez-Alonso *et al.* 2016.
- 54 Rios-Garaizar *et al.* 2015a.
- 55 Zilhão *et al.* 2016.
- 56 Ramos *et al.* 2008.
- 57 Rios-Garaizar *et al.* 2015a.
- 58 de la Torre *et al.* 2013.
- 59 Rios-Garaizar *et al.* 2015a.
- 60 Baena Preysler *et al.* 2008.

- 61 Rios-Garaizar *et al.* 2011.
- 62 Rolland and Dibble 1990.
- 63 Rios-Garaizar *et al.* 2015a.
- 64 Barton 1990.
- 65 de la Torre *et al.* 2013.
- 66 Freeman 1973, 1981; Salazar-García *et al.* 2013; Straus 2013.
- 67 Zilhão 2001a.
- 68 Bicho and Haws 2008.
- 69 Aura Tortosa *et al.* 1998.
- 70 Vaquero *et al.* 2001; Vallverdú-Poch *et al.* 2012.
- 71 Allué *et al.* 2017.
- 72 Courty *et al.* 2012.
- 73 Allué *et al.* 2017.
- 74 Courty *et al.* 2012.
- 75 Carbonell and Castro-Curel 1992.
- 76 Rios-Garaizar *et al.* 2018.
- 77 GEPP 1983; Zilhão 1992a:150–151; Raposo 1995.
- 78 Finlayson and Finlayson 1999; Stringer *et al.* 2000.
- 79 Hernández-Pacheco and Obermaier 1915; Maroto Genover 1987.
- 80 Alcázar de Velasco *et al.* 2011.
- 81 Daura *et al.* 2010.
- 82 Daura *et al.* 2010.
- 83 Walker *et al.* 2011; Trinkaus and Walker 2017.
- 84 Santamaría *et al.* 2010; de la Rasilla *et al.* 2014; Rosas *et al.* 2006b, 2015.
- 85 From one of the well-preserved juveniles, an ontogenic study was conducted using the child's cranio-dental and postcranial remains, which showed that maturation of the elements generally occurred within the range of modern humans, with the exception of the atlas and mid-thoracic region (Rosas *et al.* 2017).
- 86 Wood *et al.* 2013a.
- 87 Mendez *et al.* 2016.
- 88 Radini *et al.* 2016.
- 89 Rosas *et al.* 2006b.
- 90 Pettit 2002.
- 91 Zilhão *et al.* 2010.
- 92 Pike *et al.* 2012; García-Díez *et al.* 2015.
- 93 Rodríguez-Vidal *et al.* 2014.
- 94 Finlayson *et al.* 2012.
- 95 Hoffman *et al.* 2018a.
- 96 Hoffman *et al.* 2018a:915.
- 97 Slimak *et al.* 2018
- 98 Hoffman *et al.* 2018b.

- 99 Vega Toscana 1990; Villaverde and Fumanal 1990; Straus *et al.* 1993; Straus 1996a.
- 100 Zilhão 2000a.
- 101 For an updated formulation of the model, see Zilhão 2006; also Vaquero *et al.* 2006; Daura *et al.* 2013.
- 102 Wood *et al.* 2013b; Higham *et al.* 2014.
- 103 Trinkaus *et al.* 2007; Willman *et al.* 2012.
- 104 Walker *et al.* 2008, 2010.
- 105 Cunha *et al.* 2008.
- 106 Zilhão *et al.* 2017.
- 107 Finlayson *et al.* 2006.
- 108 Marín-Arroyo *et al.* 2018.
- 109 Finlayson *et al.* 2006:852.
- 110 Finlayson *et al.* 2006.
- 111 Maroto *et al.* 2012.
- 112 Ramos Muñoz 2013.
- 113 Ramos Muñoz *et al.* 2017

CHAPTER 3

THE FIRST MODERN HUMANS IN IBERIA: THE LATE PLEISTOCENE/UPPER PALEOLITHIC (42,000–12,000 BP)

INTRODUCTION

The Middle to Upper Paleolithic transition was a pivotal time in the history of the peninsula ([Figure 3.1](#)).¹ During the Upper Paleolithic, ca. 42,000 cal BP, the first AMH appeared in northern Iberia, with Aurignacian tools.² This suggests that the first AMH came from Northern and Western Europe over the Pyrenees. However, the events that followed were not the same throughout the peninsula. To the south of the Ebro, Neanderthals and AMH lived and possibly interacted perhaps for as long as 7,000 years. These were the last Neanderthals to exist in the world. Profound climatic instabilities occurred during this time, including the Heinrich cooling Event 4 at 40,000 cal BP,³ which impacted the local landscapes in which hominins lived, spurring innovations and diverse subsistence strategies. This period also saw an explosion of art on cave walls and cliff faces and in handheld objects, which bear witness to new expressions of identity. Archaeologists suggest this artistic explosion was related to the social dynamics that emerged when hunter-gatherers aggregated in special places, like Altamira, during particular times of year or during periods of cold climates.⁴ These encounters provoked the development of new group and individual identities, as expressed through cave and portable art.

Much current thinking about the Upper Paleolithic of Iberia is the result of investigations that began in the 1960s that were shaped by the concerns of New Archaeology, such as subsistence and technology. International collaborations played a major role in transforming Upper Paleolithic archaeology in Iberia from its cultural historical roots. For example, in Cantabrian Spain, and ultimately more widely, the collaboration of L. G. Freeman (USA) and J. González Echegaray in Cueva Morín, El Juyo, and Altamira created a school for a new generation of scholars that had enormous influence in subsequent decades. Other collaborations include those of Geoffrey A. Clark (USA), Lawrence Straus (USA), and Basque zooarchaeologist Jesús Altuna at La Riera, and between Straus, M. González Morales and Altuna at El Mirón.

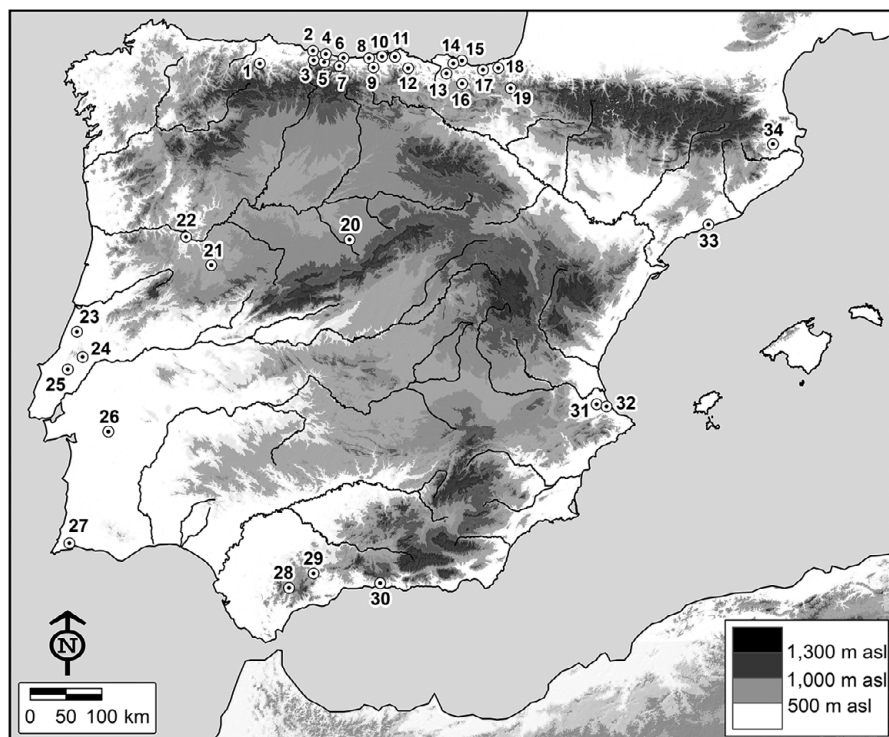


Figure 3.1 Upper Paleolithic sites (key sites). 1. El Conde; 2. Tito Bustillo; 3. La Güelga; 4. La Riera; 5. Covaciella; 6. El Pindal; 7. Llonín; 8. Altamira; 9. Monte Castillo and Hornos de la Peña; 10. El Juyo, El Pendo and Cueva Morín; 11. La Garma; 12. El Mirón and Covalanas; 13. Arlanpe; 14. Santimamiñe; 15. Armintxe and Atxurra; 16. Labeko Koba; 17. Ekain and Altxerri; 18. Aitzbitarte; 19. Abauntz; 20. Domingo García; 21. Siega Verde; 22. Côa Valley and Mazouco; 23. Lagar Velho; 24. Picareiro; 25. Vale de Porcos; 26. Escoural; 27. Vale Boi; 28. La Pileta; 29. Ardales; 30. Nerja; 31. Malladetes; 32. Parpalló; 33. Cova Foradada; 34. Davant Pau and L'Arbreda. Map: Antonio Blanco-González

CHRONOLOGY, TECHNOCOMPLEXES, SETTLEMENT PATTERN

The chronology for the Upper Paleolithic of Iberia, as for the rest of Europe, has traditionally been based on lithic technocomplexes. This typological system, developed by French prehistorians Denise de Sonneville-Bordes (1919–2008) and Jean Perrot (1920–2012),⁵ draws from archaeological sequences from French Upper Paleolithic sites. The appearance and styles of tools made from bone, antler, and ivory, and of art (portable and cave/open-air) have also been used to date Iberian Upper Paleolithic sites. Increasingly, however, radiocarbon/AMS dating are used to tether the dates for lithic assemblages and generate site chronologies. This is because there may be problems with adopting the lithic typologies and sequences from

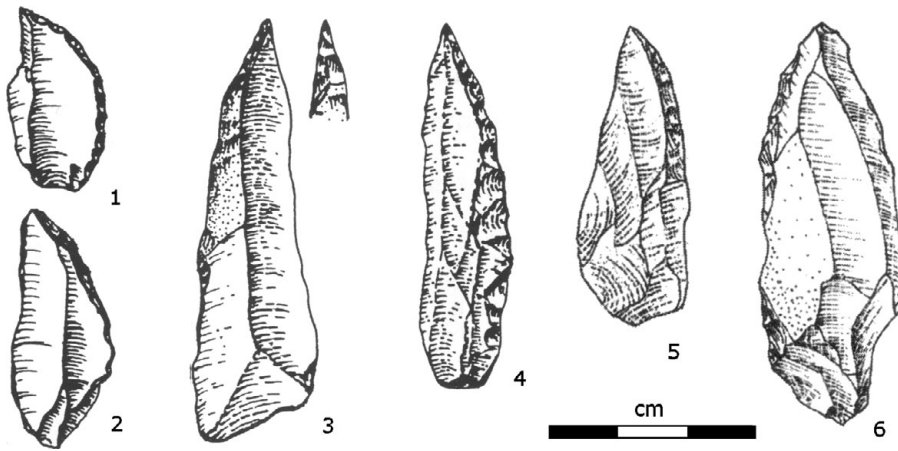


Figure 3.2 Châtelperronian lithics from Catalanian sites. 1–4. L’Arbreda; 5–6. Ermitons. From: Zilhão 2006, fig. 6 (after Maroto 2004, and Rodríguez *et al.* 2003–2004)

the French Upper Paleolithic to Iberia (and elsewhere in Western Europe).⁶ Furthermore, the dating of technocomplexes can vary regionally; some are only found in a few regions (discussed later), and there is a wide variation in tool forms among contemporary sites. Another source of variability is raw material. In western Iberia/Portugal, for example, quartzite and quartz were commonly used throughout the Upper Paleolithic, in contrast to most other Spanish and European Paleolithic sites.⁷ There were continuities, as well. For example, while blades and bladelets are generally understood to represent the mainstay of Upper Paleolithic technocomplexes, flake tools continued to be used, such as in the Aurignacian of Cantabria.⁸

The Châtelperronian represents the earliest of the Upper Paleolithic technocomplexes and dates to 42,000 cal BP.⁹ It is characterized by points, endscrapers, burins, and backed blades (Figure 3.2). Châtelperronian levels and industries are known from sites in north Atlantic Spain and Catalonia.¹⁰ They include Morín, l’Arbreda, and Cova Foradada.¹¹ Bone tools are rare for the Châtelperronian, although at Labeko Koba, a bone spearhead fragment and awl were found (Level IX, Lower), as well as items made of antler and bone.¹² One bone point might be the result of hyena activity, which also occurred in this level. Neanderthals are generally assumed to be the creators and users of Châtelperronian technologies in Spain, as they have been shown to be in France.¹³

Following the Châtelperronian is the Aurignacian (divided into Proto-, Early, and Evolved), with the Proto-Aurignacian dated to ca. 42,000 cal BP.¹⁴ This is also when AMH first appeared in Europe. By the end of the Aurignacian, only AMH lived in Iberia. Thus, the Aurignacian is a crucial phase for understanding the disappearance and replacement of Neanderthals. Aurignacian lithics include Dufour bladelets, and microliths and burins for composite tools. Tools were also made of ivory, antler, and bone (Figure 3.3).

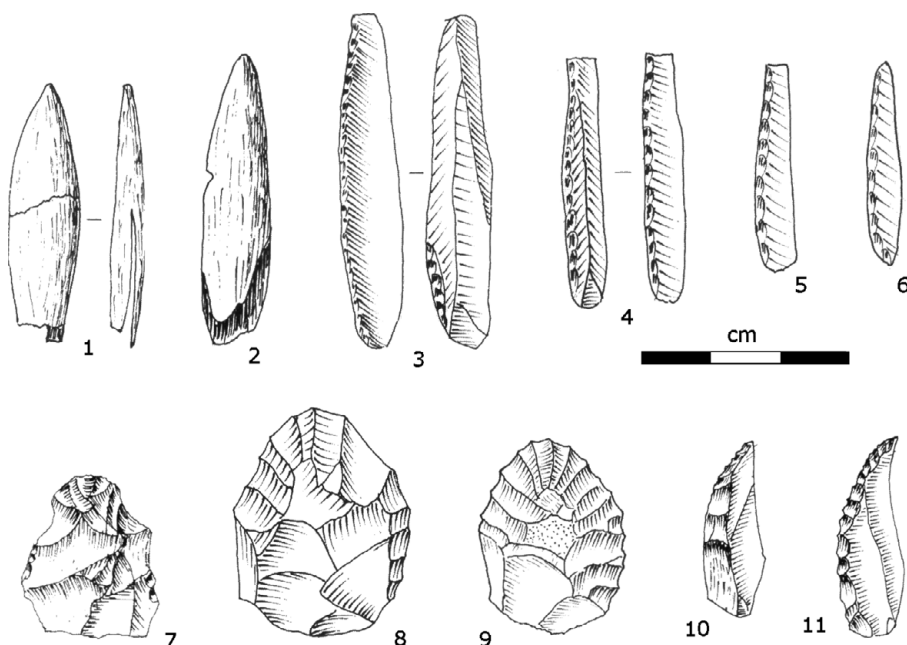


Figure 3.3 Aurignacian tools from Reclau Viver. From Corominas' Aurignacian level. 1–2. Split-based bone points; 3–6, Dufour bladelets; 7. thick-nosed scraper; 8–9. carinated scrapers; 10–11. small Châtelperron points.

From: Zilhão 2006, fig. 7 (after Canal and Carbonell, 1989, modified)

Bone points/spearheads were found in the Aurignacian levels at El Castillo in Cantabria and El Conde (named after the prehistorian Conde de la Vega del Sella) in Asturias.¹⁵ Personal adornment is known from El Castillo.¹⁶

The precise dating of the Aurignacian is critical to understanding the transition from Neanderthals to AMH. The earlier the dates for the Aurignacian, the longer the period of contact/overlap between AMH and Neanderthals and the more likely that the Châtelperronian was the result of acculturation by AMH.¹⁷ Virtually all Iberian sites with Châtelperronian and Aurignacian levels have the Châtelperronian below the Aurignacian without interstratification. Exceptions to this “rule” were proposed for El Pendo¹⁸ and La Güelga,¹⁹ although post-depositional processes were later found to account for these cases.²⁰ Some archaeologists have argued that there is no Aurignacian in Portugal, while others disagree, based on the presence of Dufour bladelets and other lithics at sites such as Vale de Porcos.²¹ The rarity of Aurignacian (and Early Gravettian) in Portugal has been explained as an artifact of a major erosional phase.²²

The Gravettian dates to 33,000–26,000 cal BP,²³ and it begins later in Iberia than elsewhere in Europe.²⁴ The period is associated with the MIS 2/a cold phase, and it extended to the beginning of the Last Glacial Maximum (LGM), at 26,500 cal BP, during which the ice sheets reached their greatest extent. Gravettian sites are primarily found in caves and rock-shelters along the coasts

of Cantabrian Spain, although they are also known in eastern and southern Spain, and in coastal and inland locales of Portugal (such as the Côa Valley, Mondego/Tejo Valleys, and the Algarve).²⁵ A novelty, open-air Gravettian settlements have recently been identified in the Basque region.²⁶ Gravettian stone tools are distinguished by backed points, such as Font-Robert points (leaf-shaped points with steeply retouched tangs), and burins. However, there is variability. For example, at Vale Boi in the Portuguese Algarve, bi-pointed double-backed tools predominated in the Early Gravettian levels, which have no parallels in Iberia (Figure 3.4).²⁷ Variation in the raw materials exploited for stone tools are also apparent. For example, in the Cantabrian region, flint, quartzite, and quartz were used, while, to the east, in the western Pyrenees, flint was exclusively used.²⁸ Rock art and portable art were also produced.²⁹

The Solutrean is dated to 25,000–22,000 cal BP (and associated with MIS 2) and is largely contemporary with the LGM, between 23,300 and 14,700 cal BP.³⁰ Solutrean sites are found in the same zones as Gravettian sites, but are also located in the Meseta.³¹ Demographic packing occurred in Vasco-Cantabria, Portuguese Estremadura, and southeastern Iberia. Indeed, the highest population densities in Europe at the time were in the Iberian Peninsula and Mediterranean due to their higher primary productivity than areas to the north (France, Germany, the north European plains).³² Diagnostic Solutrean lithics include leaf-shaped, concave base, shaped shouldered, barbed and tanged, and backed and shouldered projectile points (Figure 3.5).³³ Differences between the Solutrean industries of the northern Atlantic and southern Mediterranean are likely due to disparate social networks as well as variability in hunting strategies and mobility patterns. Solutrean points were used as thrust or projectile technologies, as well as possibly knives.³⁴

The Magdalenian is dated to 23,000–11,000 cal BP and overlaps in its terminal phase with the Late Glacial Interstadial/warming period (13–10 kya).³⁵ Changes occurred in lithic technologies from the Solutrean, with greater regional diversification and an increase in the use of bone points. For much of Western Europe, including Spain, laminar and microlaminar lithics are characteristic, in addition to antler artifacts and portable art (Figure 3.6). However, antler objects and art are rare/absent in Portugal.³⁶ Evidence for Magdalenian tools made from whale bones (most likely beached whale) was recovered from Isturitz, close to the Spanish/French border, suggesting the possibility that other bone tools may also be whale bone.³⁷ Magdalenian sites are more numerous than those of the Gravettian, and there is increased occupation of the interior and northeast of Iberia.³⁸ The transition from the Solutrean to Magdalenian, in terms of technology, settlement location, and subsistence, suggests a gradual shift (a “desolutreanization”) rather than a cultural or population replacement.³⁹ With the amelioration of the climate during the Magdalenian, populations from southwest Europe (including Iberia) expanded their hunting ranges northward, repopulating zones that had been depopulated, such as the Paris Basin, western Switzerland, and southern Germany.

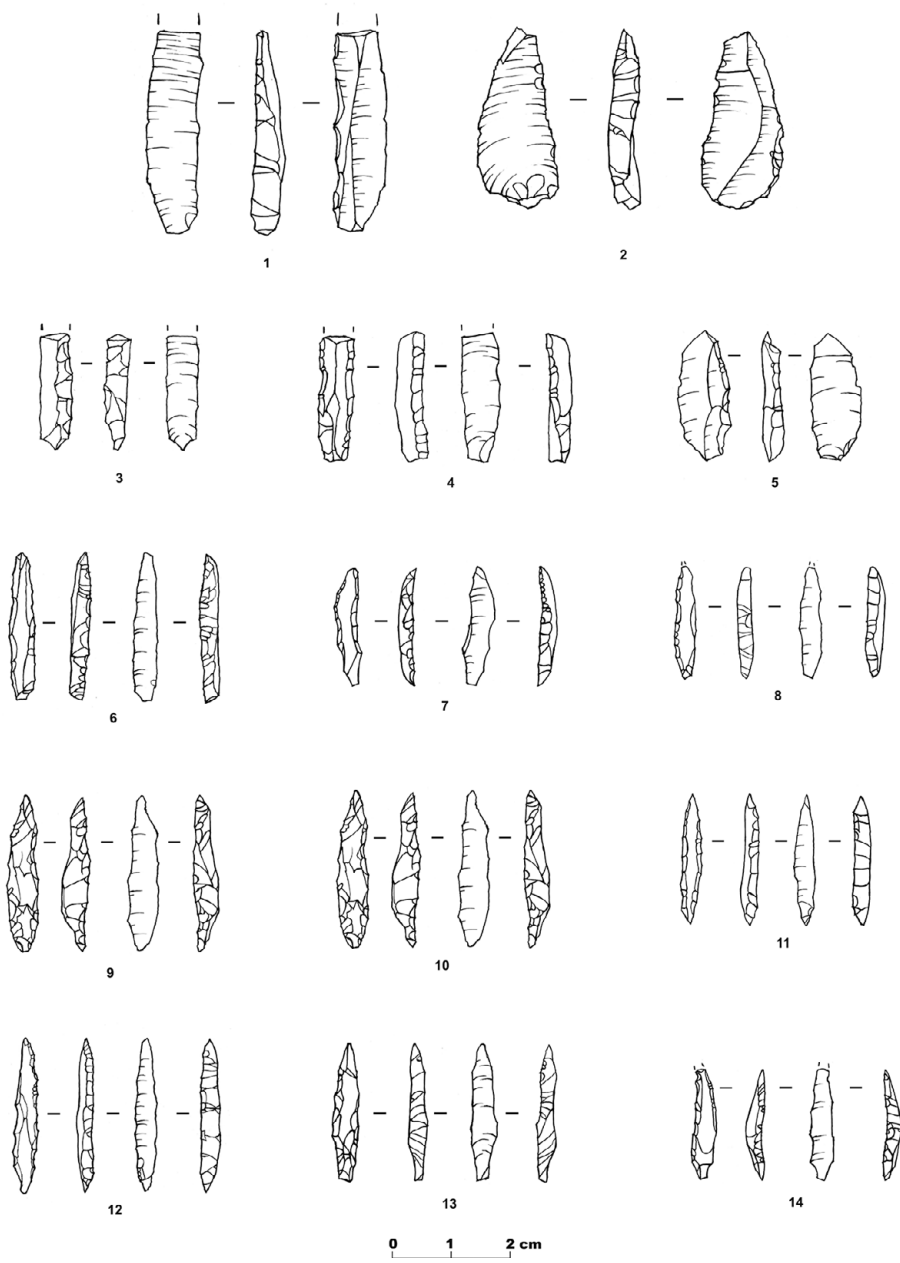


Figure 3.4 Gravettian lithics from Vale Boi.

From Marreiros *et al.* 2015, fig. 9.

SUBSISTENCE

Studies of Upper Paleolithic subsistence practices have been carried out in recent decades, and they have tended to focus on faunal remains at individual sites, with only some regional analyses. Only recently have studies been

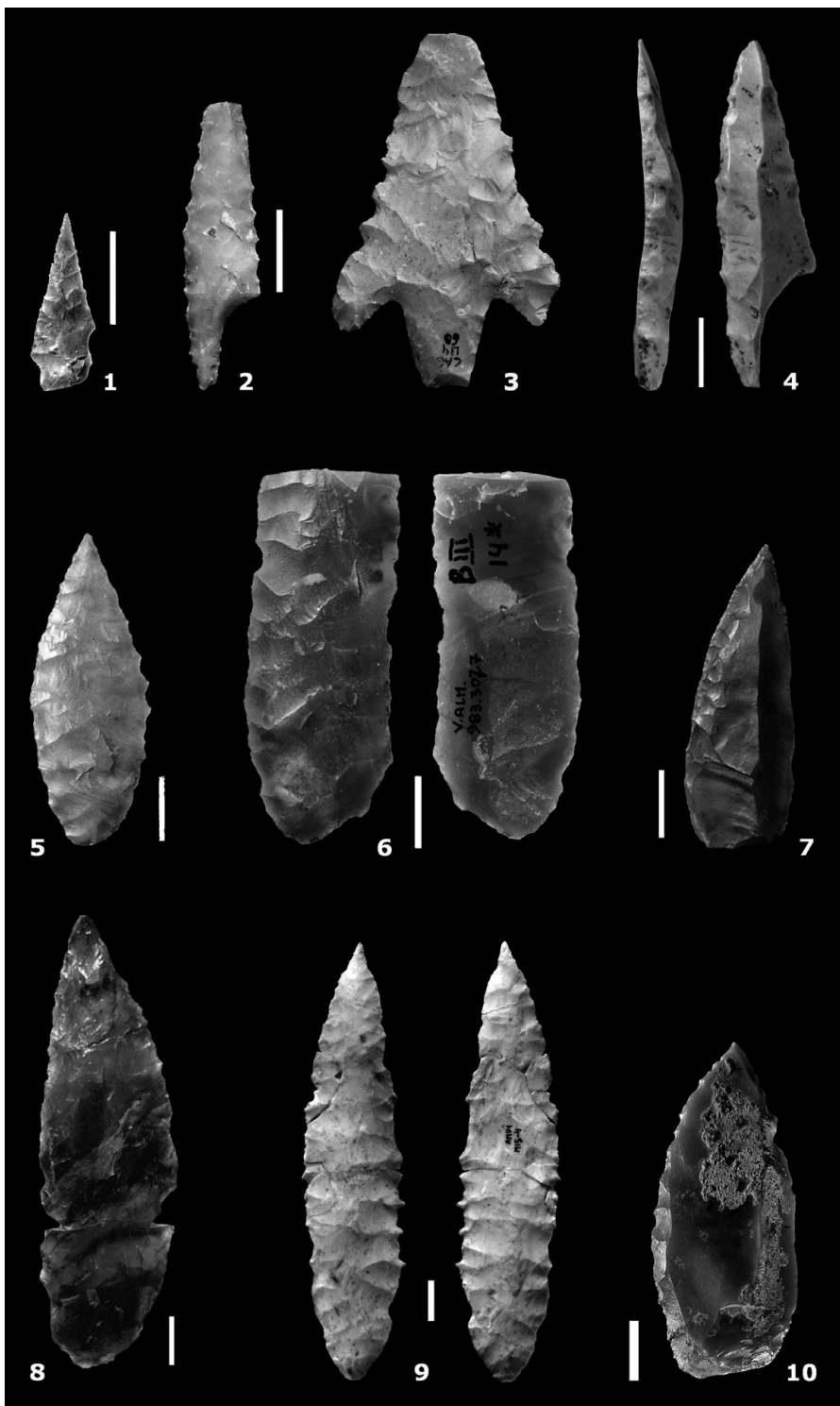


Figure 3.5 Index fossils of the Portuguese Solutrean (all scale bars = 1 cm): 1. Microlithic foliate point; 2. Cantabrian-type shouldered point; 3. barbed-and-tanged (Parpalló) point; 4. Mediterranean-type, backed-and-shouldered point; 5. small laurel leaf; 6. willow leaf; 7. pointe à face plane; 8. laurel leaf with convex base; 9. laurel leaf with denticulated edges; 10. Vale Comprido point. 1, 5–8. Vale Almoinha; 2–3. Gruta do Caldeirão; 4, 9. Galeria da Cisterna (Almonda); 10. Terra do Manuel (1940–1942).

From: Zilhão 2013, fig. 1

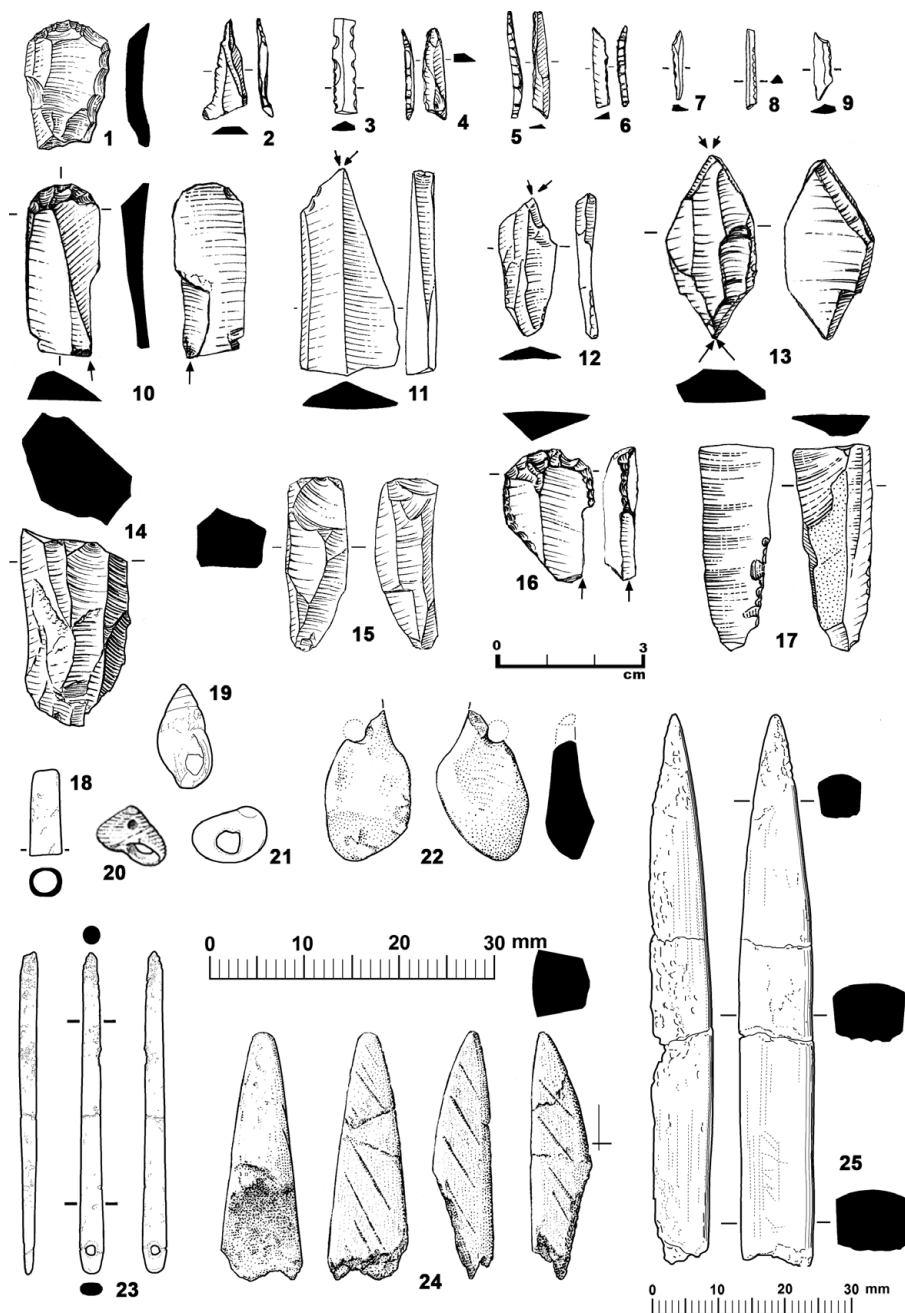


Figure 3.6 Magdalenian lithics and bone tools from Cova del Parco (Alòs de Balaguer, La Noguera, Lleida).

From: Mangado *et al.* 2010, fig. 5

integrated to peninsular-scale analyses of settlement and demographic patterning, using databases of radiocarbon dates and statistical modeling.⁴⁰ Archaeobotanical studies are relatively rare.⁴¹

One of the principal questions is how subsistence changed during the Upper Paleolithic. Whether intensification/diversification occurred between the Middle to Upper Paleolithic transition, during the Upper Paleolithic, or at the Upper Paleolithic–Early Holocene transition, and how subsistence practices varied regionally are key research agendas.⁴² Jones carried out an important set of peninsular studies.⁴³ Drawing from ecological models that relate resource predictability and patchiness, she compared the two major environmental zones of the peninsula: the Eurosiberian and Mediterranean zones. She analyzed the relationship between site location and the range of fauna exploited and discerned important patterning. In the Eurosiberian zone, people exploited a narrower range of fauna, overall, than those in the central and southern (Mediterranean) Iberia, where a broader range of animals were hunted. This, she suggested, translated into different mobility strategies. The cooler/wetter Eurosiberian zone was characterized by residential mobility, while groups in the warmer/drier Mediterranean practiced logistical mobility.

The relationship between climatic change and subsistence practices has been documented for the Upper Paleolithic of the Algarve. Fauna include aurochs, goat, horse, rabbit, red deer (*Cervus elaphus*), tortoise, wild ass, and wild boar; there were also carnivores, such as fox, bear, wolf, and lynx. During colder oscillations, when landscapes became more open, grazing animals like aurochs increased. During warmer periods, when vegetation became more closed, rabbits decreased.⁴⁴ An important site for understanding these changes is Vale Boi, which was occupied between the Gravettian and Magdalenian.⁴⁵ The site has the earliest evidence in Eurasia for grease-rendering (using bones of red deer), which has been argued to be evidence for intensification.

The cave site of Picareiro, in central Portugal, provided additional evidence of subsistence practices and site functions for the Upper Paleolithic and specifically the Magdalenian (Figure 3.7).⁴⁶ There, evidence was recovered for diverse fauna, including rabbits, red deer, and wild boar, as well as the processing of these fauna through smoking and grilling.

During the LGM of the colder north, in Cantabria, red deer, ibex, bison, and horses were hunted.⁴⁷ Straus argued that two modes of subsistence intensification can be documented for the region: situational specialization and overall diversification. Some large-scale kills of species are documented (red deer and ibex), as well as cases of resource diversification, which include mollusc gathering and fishing (e.g., at La Riera). Intensification during the Solutrean is also suggested in southern Spain, at the Cueva de Nerja, where an increase in the numbers of fish and rabbits and a decrease in ungulates is



Figure 3.7 Lapa de Picareiro.

Photo: Courtesy of J. Haws

documented.⁴⁸ In the Chatelperronian and Aurignacian levels at Labeko Koba, early evidence was recovered for the specialized hunting of bovids.⁴⁹

SITE STRUCTURE

Evidence for space/site structure and activity areas, such as animal processing, stone tool manufacture, and fire, is documented at a number of sites. For example, at Lagar Velho, best known for its burial of a modern human child with mosaic features (AMH and Neanderthal, discussed later), excavations recovered temporary or logistical occupations dated to the Terminal Gravettian. They included a hearth with fire-cracked rocks associated with a stone tool-knapping area, and more intensive use of the site as a base camp in the Middle Solutrean.⁵⁰

BURIALS AND HUMAN REMAINS

Burials and human remains dated to the Upper Paleolithic of Iberia are surprisingly scarce. Indeed, there are fewer individuals dated to the Upper Paleolithic than the Middle Paleolithic.⁵¹ One wonders if there is something about Upper Paleolithic burial practices that accounts for their poor preservation, since, in both the Middle and Upper Paleolithic, caves were predominantly used. Some of the few Upper Paleolithic burials known for the Iberian Peninsula are reviewed, from the earliest to the latest.

At Cueva Morín, in levels dated to the Aurignacian, at least three and possibly four human burials were recovered.⁵² However, archaeologists debate their interpretation. The reason they are controversial is because none of the bones of the bodies (and associated fauna) were preserved. Rather, molds were found where the bones would have been. This is likely the result of saponification, a process in which decomposition of the bodies resulted in sediments filling in the areas where the flesh and bones would have been. The best

preserved of these pseudomorphs, as they are known, is Morín I, an adult found lying on its left side with arms flexed, who was missing its head and feet. Associated with this individual was the mold of a large animal, found where the adult's head would have been, as well as ochre and charcoal.

The Gravettian burial at the rock-shelter of Lagar Velho, in central Portugal, has provided an important window into Paleolithic burial practices but, more importantly, revealed insights into the relationships between Neanderthals and AMH.⁵³ Overlooking the tranquil and lush Lapedo Valley (Figure 3.8a), the site was identified in November 1998 by speleologists João Mauricio and Pedro Souto, who were exploring a rock art site across the valley. After spotting the rock-shelter, which had been partially damaged from earth-moving activities prior to its discovery, they explored the surface and found red deer, horse, and rabbit bones, as well as human bones. Mauricio and Souto contacted João Zilhão, who then worked with colleagues Cidália Duarte and Ana Cristina Araújo to excavate the site over the following three weeks to minimize damage from the wet winter rains. What their excavations made clear was that the site was the grave of a modern human child dated to 24.5 kya (Gravettian) and the first Paleolithic burial discovered in the Iberian Peninsula. (Figure 3.8b). The four to five year old was buried with pierced shell, red deer teeth, and red ochre (possibly as part of a shroud that wrapped its body), two red deer pelvises, and a rabbit placed between its legs. Analyses revealed that features of the child's skeleton, such as the lower limbs and occipital region of the skull, showed Neanderthal features as well as those typical of a modern human. The Lapedo child suggested that Neanderthals and modern humans interbred, at least in some regions. This model was subsequently confirmed by DNA analyses on other remains.⁵⁴

Dated to around the same time as the Lagar Velho child is an occipital bone, also from a juvenile (five to seven years old), from the cave site of Malladetes.⁵⁵ It came from a Gravettian cultural context and was AMS-dated to $25,120 \pm 240$ BP. Unlike the Lagar Velho child, however, this individual did not have Neanderthal features. The excavators acknowledge that genetic exchanges could still have taken place in other areas of Iberia, but do not see evidence of AMH/Neanderthal admixture in this particular child.

In the 1960s, excavations at the cave of Nerja recovered the remains of four individuals associated with Solutrean laurel leaf lithics.⁵⁶ These included one adult female, one adult male, one child, and one indeterminate. Investigations resumed in the 1980s under the direction of Jordá and revealed additional remains, including the articulated bones of a human foot, believed to belong to the indeterminate individual.⁵⁷ No burial pits were noted, although large stones were apparently placed with the dead, as well as ochre. Some questions remain regarding the stratigraphic relationship between the individuals and whether they all date to the Solutrean; radiocarbon dates were carried out in contexts associated with at least three of the four individuals.

(a)



(b)

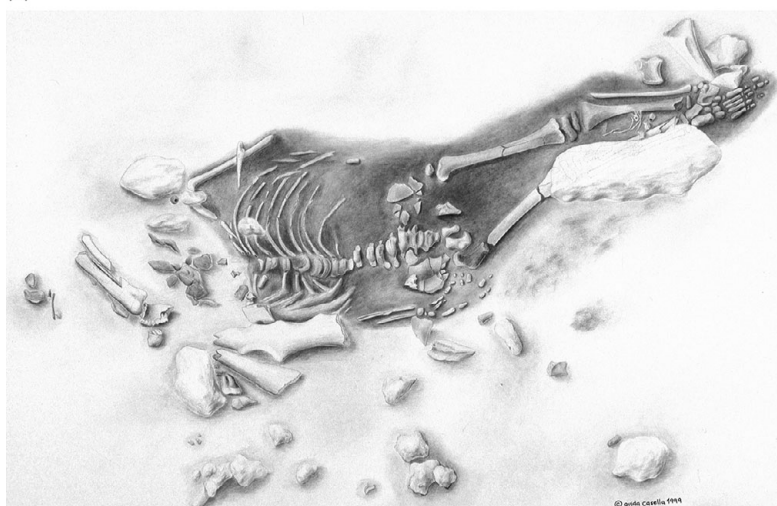


Figure 3.8 (a) View of Lagar Velho. (b) Lagar Velho burial.

Photos: (a) Courtesy of A. C. Araújo. (b) Courtesy of J. Zilhão; drawing: G. Casella

The burial of an adult woman at El Mirón, discovered in 2010, was the first substantial burial dated to the Magdalenian in the Iberian Peninsula.⁵⁸ Interdisciplinary analyses have generated a wealth of information about the woman, the manner of her burial, and the world in which she lived ca. 18.7 kya. El Mirón was a place of habitation as well as ritual, and portable and rock art were found in association with the burial. The woman's cranium and most of her long bones are missing. The mandible with its teeth and one upper tooth are

present. Analyses show that she was thirty-five to forty years old at the time of her death, but otherwise healthy; her teeth were heavily worn, possibly the result of paramasticatory use. She ate meat, fish, and plant foods, including mushrooms, during her life. At death, her body was placed on its left side in a depression between a large stone block and cave wall. Her bones were largely covered with sparkling red ochre (specular hematite) of nonlocal origin, which could have derived from her clothing or was placed on her body in a burial ritual. For this reason, she is also known as the Red Lady of El Mirón. In association with the burial, although not clearly offerings, were bone needle fragments and shells. On the nearby block that had fallen in the cave shortly before the burial were engravings, some suggestive of a pubic triangle and a hand with fingers. A carnivore appears to have removed some of her bones, and, following that, people may have removed the cranium and largest bones as part of a secondary ritual. DNA analyses of the Red Lady, which were part of a larger study of fifty-one Upper Paleolithic European populations, show that she represents a group once present in northwest Europe that had taken refuge in southwest Europe during the post-Glacial Maximum.⁵⁹

RELIGION AND EXPRESSIVE ARTS

Archaeologists used to view symbolic behaviors, such as religion, ritual, burial, and art, as distinctive markers of humanity, distinguishing AMH from Neanderthals as well as other animals. Recent research, however, has increasingly blurred these lines. Examples of Neanderthal art have been discussed in [Chapter 2](#). Chimpanzees have also been observed in engaging in ritualized stone throwing⁶⁰ and in possible grieving/mortuary rituals.⁶¹ Although Neanderthals appear to have engaged in symbolically charged behaviors, such as making art and burying their dead, the symbolic behaviors of AMH were more abundant and varied. AMH painted, engraved, and pecked images of animals, hands, geometric images, and occasionally humans inside caves, rock-shelters, and cliff faces. They also made and used personal adornment in the form of pendants made from stone, bone, and teeth. They fashioned batons and spear-throwers from bone, antler, and horn. As among other Upper Paleolithic peoples of southwest Europe, there was an intimate relationship between animals and art in Iberia. They engraved images of animals on animal bones used to hunt animals. They carved objects made from animal bones into the form of animals. They painted and engraved the walls of caves and cliffs with images of animals where animals were butchered.

Visiting the caves and cliff faces where Upper Paleolithic people made their art and experiencing the vast and disorienting chambers in which this art is sometimes found, with their dizzying array of stalagmites and stalactites, where some images are larger than life-size, while others are small or one has to contort one's body to see, where sound and light are often intensely absent, one can better appreciate



Figure 3.9 Museu do Côa and landscape of Côa Valley.

Photo: A. M. Baptista, © Fundação Côa Parque

how this art, in its making and viewing, were also powerful multisensorial experiences.⁶² The close interrelationship between art, subsistence, religion, and the technologies of Upper Paleolithic people challenges us, as inhabitants of the twenty-first century, to consider the culturally specific ways ancient peoples envisioned their worlds and the relationship between the material and the spiritual, between nature and culture, and between humans and other animals.⁶³

Many of these caves and rock art sites are open to the public, although some require appointment. However, even by visiting the Museo de Altamira (Altamira Museum), the Museo de la Evolución Humana in Burgos (Museum of Human Evolution), the Museu do Côa (Côa Museum) in Vila Nova de Foz Côa (Figure 3.9), or the Museo Arqueológico Nacional in Madrid one can gain a glimpse into the astonishing variety of artistic and symbolic expressions during the Upper Paleolithic of Iberia.⁶⁴

The following section summarizes the Upper Paleolithic art of Iberia, by region. Given the central role of Altamira in the history of Iberian archaeology and the study of ancient art, a presentation of Altamira, its discovery, and its legacy introduces this section. This is followed by a discussion of the Côa Valley art and its significance to our understanding of Paleolithic art.

Altamira and the History of Archaeology in Iberia

The discovery of Altamira Cave and its art in 1879 revolutionized scholarly understanding of ancient art and modern human origins. Occurring just two decades after Darwin's publication of *On the Origin of Species* (1859),⁶⁵ the

almost mythical story of the cave's discovery, the controversies that followed, and the role played by the different key figures involved in its discovery and interpretation (and even some key dates) are debated.⁶⁶ As the story goes, a local hunter named Modesto Cubillas (1820–1881) discovered the cave when his dog wandered into the entrance and Cubillas followed him. The year this took place is disputed. According to Breuil, the cave's discovery took place in 1868, while Sautuola believed it was between 1870 and 1872.⁶⁷ Knowing that the landowner Don Marcelino Sanz de Sautuola was not only a lawyer, but a person interested in natural history and antiquities (who also introduced the cultivation of eucalyptus in Cantabria), Cubillas brought Sanz de Sautuola to the cave some years later, in 1876. Sanz de Sautuola walked through the cave and saw some black lines but did not think much of them nor considered them the work of prehistoric people. In 1878, Sanz de Sautuola traveled to the Universal Exposition in Paris, where he saw Paleolithic portable art from the Dordogne. After returning home, he began excavations at the cave in 1879, accompanied by his eight-year-old daughter María. María wandered off into the cave, which extended some 300 m, and soon found herself face to face with the polychrome bison in the chamber that came to be known as the *Sala de Policromos*, exclaiming “¡Mira, papá, bueyes!” Even though Sanz de Sautuola is generally credited with the cave's discovery, one could argue that the real discoverers of Altamira and its art were Cubillas's dog, Cubillas, and María.

Sanz de Sautuola then invited Don Juan Vilanova y Piera, Professor of Paleontology at the University of Madrid and a leading paleontologist, geologist, and archaeologist, to visit the cave to get his expert opinion. Vilanova was convinced of the art's antiquity and authenticity. Sanz de Sautuola continued his studies of Altamira. He noted the different entrances of the site between the past and present, conducted excavations near the entrance, methodically described and drew the paintings from the exterior to interior, and published his findings in 1880.⁶⁸ Both he and Vilanova recognized their antiquity – as evidenced by the extinct bison and similar art styles in the portable objects and the cave. Vilanova presented the site at the “International Congress of Anthropology and Prehistoric Archaeology” in Lisbon in 1880 (and at other scholarly venues over the following years). However, many prehistorians, including Cartailhac and Mortillet, were not convinced of the art's authenticity. No one at the conference even wanted to visit Altamira on a trip that Vilanova had planned, something that would be difficult to imagine happening at a conference today!⁶⁹ Cartailhac walked out of the conference in disgust. The paintings were too well preserved and of too high quality. French engineer and prehistorian Édouard Harlé (1850–1922), after a visit to the cave, went so far as to argue that, although he agreed the cave was ancient, the paintings were forgeries carried out by French painter Paul Ratier Josse (1832–1896) as there was no soot found on the cave ceiling. Sanz de Sautuola had, indeed, commissioned Ratier, but it was to have him make a replica of the paintings



Figure 3.10 Ceiling of the Polychrome Room, by Paul Ratier.

Photo: Pablo Hojas; copyright: National Museum and Research Centre of Altamira, Spanish Museum of Education, Culture and Sport

(Figure 3.10). Some prehistorians did accept the antiquity and authenticity of paintings, however, such as Edouard Piette (1827–1906).⁷⁰ Why so many were willing to accept the antiquity of Paleolithic portable art but not cave art may be due to notions that portable art was “primitive” and “tribal” and, thus, “appropriate” art for an ancient people, but not ‘sophisticated’ paintings.⁷¹ French chauvinism may also have been at play, as it was only when cave paintings of a similar style to Altamira were found in France, beginning with La Mouthe in 1895, that prehistorians, including Cartailhac, acknowledged the authenticity of the art at Altamira. In 1902, Cartailhac visited Altamira for the first time, with Breuil and María Sanz de Sautuola, and shortly afterward published his now famous “*Mea culpa d’un sceptique*”⁷² as well as reports of the site with Breuil.⁷³ Unfortunately, Sanz de Sautuola died in 1888 and did not live to enjoy the public and scholarly recognition of Altamira’s antiquity or his reputation vindicated. Cartailhac’s admission of error is often portrayed as a laudable (and unusual) practice for a scientist, although some have suggested that this apology was opportunistic and served to primarily enhance his own status, especially in light of overwhelming evidence of his significant misjudgment.⁷⁴ Different understandings of the role of Vilanova have also been proposed. Moro Abadía and Pelayo⁷⁵ noted that, while it is easy to see Vilanova as the forward-thinking precursor who recognized the antiquity of Altamira, he was also a creationist and anti-Darwinist. Vilanova believed that the art at Altamira represented such perfection that it actually proved that God created human beings and that humans did not evolve.

The cave of Altamira extends ca. 300 m in length, and its art is found in distinct zones or galleries (e.g., Bison Gallery, Deer Gallery, Gallery of Tectiforms, Cervid Gallery). The largest and most famous of these galleries is the Bison Gallery, which extends some 18 m. The bison are large, some are 2 m in length, and they are distinctive in their stylistic homogeneity, suggestive of a singular artist or closely working group. As at other cave sites, the artists sometimes worked with the natural relief of the cave to accentuate anatomical features of the animals and

recreate a sense of their three-dimensionality. Breuil's study of the art at Altamira and its superpositions produced the first chronology of Upper Paleolithic art, which was dated from the Aurignacian to the Magdalenian and proceeded from simple to complex forms.⁷⁶ Leroi-Gourhan refined and revised this chronology,⁷⁷ drawing on parallels with portable art, and suggested that the paintings in black were the oldest, which were followed by the polychrome paintings, and finally the engravings. Bernaldo argued that the art should be contemporary with the archaeological evidence for the cave's occupation in the Upper Solutrean and Early Magdalenian.⁷⁸ The discoveries at Altamira (and later, Lascaux) inspired Breuil and others to suggest that Paleolithic art served as sympathetic magic designed to promote a successful hunt or fertility.⁷⁹

In an attempt to test deductively a behavioral model for hunter-gatherer mobility using artistic style, Conkey analyzed the style of engravings in the mobiliary art of Altamira recovered during the excavations of Alcalde del Rio, Breuil, and Obermaier.⁸⁰ She studied these objects to test the hypothesis that the site was an aggregation site for dispersed hunter-gatherer groups. The diversity of styles seemed to support this, although the necessary chronological controls for these objects were not ideal. Uranium-series dating of the calcite precipitates covering the art at Altamira⁸¹ now suggests that the art was produced over a long period of time – between 35 and 15 kya. If portable art was also produced over this period, as suggested by AMS dating,⁸² the diversity of engraving styles may be primarily a chronological marker and not entirely the result of artistic variability at any one given time. Nonetheless, Conkey's work was an important effort in relating art styles to mobility.

As Altamira was the first Paleolithic cave art site discovered in Europe, and because of the dramatic controversy and vindication of Sanz de Sautuola (and Vilanova), Altamira and its art have become symbols of Spanish national pride and identity. The *Bisonte* cigarette brand has used the eponymous painting as its logo. The Altamira "brand" has even been coopted for marketing by non-Spaniards. For example, the Australian guitar company – *Altamira* – bases its name on "a traditional Spanish landmark, and with the classical guitars' deep Spanish roots, Altamira guitar luthiers strive to follow in the footsteps of the great Spanish luthiers, obeying traditional Spanish construction methods to produce consistently high-quality instruments at great value."⁸³ Altamira's global significance was recognized in 1985, when the site was inscribed as a UNESCO World Heritage site.

One consequence of Altamira's cultural importance was that the cave and neighboring town of Santillana del Mar became popular tourist destinations. In the 1970s, over 150,000 tourists visited Altamira each year.⁸⁴ In 1979, the Altamira Research Centre (Centro de Investigación de Altamira) was established. However, the site's popularity also brought preservation problems. Mold growth was detected on the cave walls in the late 1970s, the result of people breathing out carbon dioxide, and it was closed. Scientists conducted a

series of impact studies, leading to vigorous debates between scientists, archaeologists, and local politicians about whether Altamira should be completely closed or open to small groups of visitors for brief periods of time. Experiments in limiting admission were made.⁸⁵ A replica of the cave (*Neocueva*) and a museum was constructed near the site in 2001, and, in 2002, the cave was closed. In 2014, very limited access was granted (through a random lottery), which was a policy supported by José Antonio Lasheras, the director of the museum and replica cave between 1991 and 2016. Lasheras viewed this decision as a calculated risk, balancing scientific principles and an ethos of making cultural heritage accessible to the public: “We also take a risk when we hang our best paintings in museums,” he said. “We don’t put these paintings in Trafalgar Square, where more people would see them; nor do we keep them in a closed-off room, where nobody would see them.”⁸⁶ Even under these conditions of very limited access, the museum and nearby replica cave enjoyed 250,000 visitors in 2013, suggesting that tourists continue to be drawn to Altamira and the dramatic landscape of Cantabria.⁸⁷ In part, to publicize the site and region, the film *Finding Altamira* (2016), starring Antonio Banderas as Sanz de Sautuola, was produced. It recounts the discovery and controversies surrounding the site, with – naturally – some artistic liberties taken.⁸⁸ Tragically, Lasheras died in a car accident on his way to viewing an early screening of the film.

Although excavations of Altamira are not currently taking place, investigations continue on the material recovered from the site and dating of the art. For example, use-wear studies of the large shell assemblage, totaling around 7,400, have shown that shells (*Patella*) were employed to obtain and process the ochre used to paint the cave walls (as well as utilized as perforators), demonstrating that shells not only played an important role in Upper Paleolithic subsistence and ornamentation, but were also used as tools.⁸⁹ Research on the paintings at Altamira have continued through direct dating of the pigments and indirect methods dating the calcite covering the paintings, as discussed in [Chapter 2](#) and will be discussed further in this chapter.⁹⁰

The Legacy of Altamira: The Cõa Valley

In the years following the discovery of Altamira and its recognition as an ancient cave art site, archaeologists began to explore and excavate the many caves of the Franco-Cantabrian region, as well as those in other regions of the Iberian Peninsula. Alcalde del Río discovered and published on Cueva del Castillo, Hornos de la Peña, and Covalanas.⁹¹ Alcalde del Río, Breuil, and Sierra later published their monographic classic *Les Cavernes de la Région Cantabrique* (*The Caves of the Cantabrian Region*; 1911),⁹² which made scholars aware of the rich cave art heritage of the region, including the sites of El Pendo and El Pindal. These pulses of research activity and discoveries were

interrupted by the Spanish Civil War and World War II. The fruits of these labors are discussed in the later regional review.

Echoes of the skepticism that greeted the Altamira discovery were heard again when in 1994, another major discovery of Paleolithic art in Iberia galvanized the world's archaeological community. This was the art of the Côa Valley in northeastern Portugal, one of the largest collections of Pleistocene rock art in the world.⁹³ The Côa art is significant not only because of its richness and abundance, but also because it was found in the open air, on schist rock faces along 17 km of the Côa Valley (Figure 3.11). Over 500 images made by engraving, pecking, incision, and painting and dated to the Paleolithic have been recorded in a series of clusters/sites along the Côa River.⁹⁴ The art depicts aurochs, horses, deer, ibex, a few anthropomorphs, and geometric images. The art is discussed in greater detail in the section "[The Douro/Duero Valley](#)." In many ways, the Côa art should not have been a surprise, as other open-air Upper Paleolithic art sites were known to exist in the region. Mazouco and Domingo García had been identified in the early 1980s, and, in 1988, just a few kilometers east over the Portuguese/Spanish border from the Côa, animal imagery depicted in similar styles as the Côa art had been found at Siega Verde.⁹⁵ Unlike Altamira, the discovery of the Côa art did not have clerical implications, but economic and political ones. Portugal's national electricity company – Electricidade de Portugal (EDP) – was in the process of building a large hydroelectric dam, which, when completed, would have drowned the art under 100 m of water. If the art was recent, the case for preservation would have been weakened.⁹⁶

Upon the art's discovery, the EDP commissioned a team of American and Australian scientists to carry out direct-dating on three panels – those at Canada do Inferno, Ribeira de Piscos, and Penascosa – and an array of methods were applied. These included chlorine-36 to date the exposure of the engraved rock surface,⁹⁷ AMS to date organic matter in weathering rinds and mineral accretions, and micro-erosion.⁹⁸ They produced contradictory results. The chlorine-36 study demonstrated that the rock faces had been exposed for a long period of time (some for more than 130,000 years), but other analyses pointed to a Holocene date, with geomorphic studies suggesting that the environment of the valley was too unstable to preserve art of the Pleistocene.

Most scholars of Paleolithic art, however, argued forcefully that all the evidence indicated that the Côa art dated to the Upper Paleolithic (Solutrean and Magdalenian), although they recognized that there were also some later Holocene images.⁹⁹ No associated living sites had been found with the art until the discovery, in August 1995, of the open-air site of Salto do Boi (Cardina), 3 km from the clusters/sites of Penascosa and Quinta da Barca. Living floors at the site were dated by their lithics to the late Magdalenian, between 12,000 and 10,000 BP.¹⁰⁰ Broad-based support for preserving the art was also

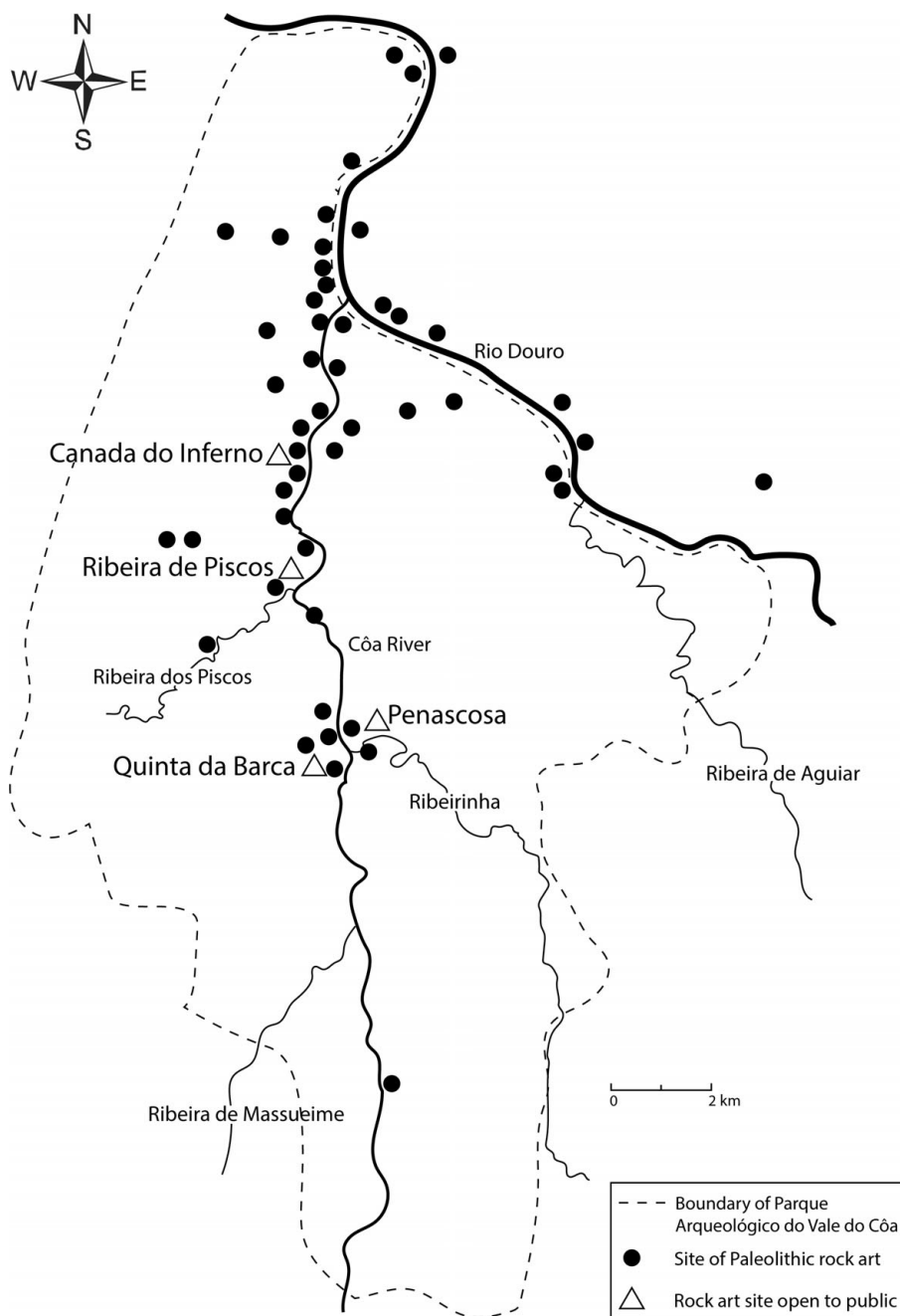


Figure 3.11 Parque Arqueológico do Vale do Côa.

Map: Rasmus P. L. Schlütter; adapted from maps © Fundação Côa Parque, design Brandqueen and © Fundação Côa Parque, design Jorge Sampaio

gathering and intensifying. This support was found at the local level among the grape-growers of the Côa Valley, whose livelihood would have also been impacted, and local citizens (Figure 3.12), at the national level, and among the international scholarly community.

SÁBADO, 4 FEVEREIRO 1995 31 cultura

Estudantes manifestaram-se em Foz Côa contra a barragem da EDP

“As gravuras não sabem nadar!”

O CANCELAMENTO da deslocação de Mário Soares à região do Douro superior — frustrada pelo nevoeiro que reteve o helicóptero presidencial no aeroporto de Lisboa — descepcionou profundamente as centenas de pessoas que ontem o esperavam em Moncorvo e Foz Côa, onde o presidente iria visitar as gravuras rupestres ameaçadas pela construção da barragem da EDP.

Na ausência de Soares, os grandes protagonistas do dia foram os estudantes foz-coenses, que promoveram uma manifestação de protesto e desfilaram pelas ruas da vila empunhando cartazes onde se lia “As gravuras não sabem nadar!” e “Não destruíam o nosso paraíso”. Embora não tenha chegado a realizar-se, a projectada visita presidencial causou um incidente protocolar com o subsecretário de Estado da Cultura, Manuel Proença, e com o presidente do Ippar, Santos Pinheiro, aos quais desagrado o facto de Soares ter convidado informalmente os técnicos da UNESCO — que se encontram no Vale do Côa em missão de avaliação técnico-científica — para acompanharem a sua visita. Dado que os homens da UNESCO se encontram na zona a convite do Ippar e tinham regresso marcado para ontem à tarde, Santos Pinheiro decidiu não lhes conceder a necessária autorização para que prolongassem a sua estadia em Portugal, tendo apenas reconhecido já ao fim da manhã, mediante um pedido formal que lhe foi endereçado pelo consultor da Presidência para o Ambiente, Mário Baptista Coelho.

Face ao malogro da visita — que Soares apenas decidiu suspender por volta do meio-dia, quando se tornou evidente que o nevoeiro não iria dissipar-se atempadamente —, o presidente decidiu enviar um convito



Na ausência de Mário Soares, retido em Lisboa por causa do nevoeiro, os protagonistas do dia acabaram por ser os estudantes de Foz Côa

aos técnicos da UNESCO, que estes já acataram, para almoçarem hoje com ele em Belém.

Mário Soares prometeu já que iria cumprir “num curtíssimo prazo” o programa a que ontem se viu obrigado a faltar, e encareceu dos pedidos de desculpa o presidente socialista da Câmara Municipal de Torre de Moncorvo, Aires Ferreira, que era ontem o espelho do tremendo desluzo que o cancelamento da visita provocou na população daquela vila.

Atrasado, por várias vezes o autarca evitou a custo chorar. “Já via o que é amanhã os jornais escreverem: ‘Soares não foi a Moncorvo...’”, lamentava, ao mesmo tempo que ia fazendo contas a uma nova despesa. Mas “contra imprevistos destos

não há rigorosamente nada a fazer”, como notou Mário Baptista Coelho, recordando que “o desembarque da Normandia foi selado sete vezes”.

O cancelamento da visita foi particularmente sentido pelo grupo de arqueólogos que mais têm lutado pela preservação das gravuras rupestres, exigindo a suspensão das obras da barragem da EDP que ameaça submergê-las. Alguns deles acreditavam mesmo que o presidente, “ao aceitar deslocar-se ao Vale do Côa”, iria pedir o embargo do empreendimento da EDP. De resto, uma fonte próxima da Presidência disse ao PÚBLICO que Mário Soares “está muito sensibilizado para este problema” e partilha a ideia de que as gravuras podem constituir “um

fibuloso meio de desenvolvimento para esta região”.

Talvez por ser dia de aulas, centenas de estudantes aguardavam ontem Soares em Moncorvo e em Vila Nova de Foz Côa. Aqui, os alunos da Escola Secundária do Tormentil-Coronel Adão Carrapatoso tinham preparado uma manifestação pró-gravuras. “As gravuras não sabem nadar” era — numa alusão ao mais conhecido tema do grupo rap Black Company — uma das palavras de ordem que os respectivos cartazes ostentavam. Os jovens acabaram por avançar com a manifestação, mesmo sem Soares, e desfilaram pelas ruas da vila, acanhados concentrados em frente à Câmara Municipal.

Esta vaga de entusiasmo

estudantil contagiou já cerca de 50 escolas da região, estando neste momento a circular um abaixo-assinado, subscrito, até ao momento, por cerca de 15 mil alunos, e que irá ser enviado a várias personalidades, entre as quais o próprio Mário Soares.

Elementos do movimento cívico a favor da salvaguarda do Côa esperam que esta adesão juvenil alastre aos estudantes de todo o país, se estenda a alguns países europeus e culmine, em breve, numa operação ao estilo “Greenpeace”: um megacampamento em frente às obras da barragem, de modo a impedir o seu avanço.

Ao lado dos estudantes de Foz Côa estão também os seus professores. Ontem, o Conselho Pedagógico da escola secundária

local divulgou uma resolução tomada em plenário, no sentido de solicitar “a preservação total das gravuras rupestres e de todo o vale do rio Côa”. Tendo em conta “que a preservação deste património é um dever cívico, não só pelo seu valor como património histórico e cultural, nacional e mundial, mas também como potencial de alternativas económicas que permitirão o desenvolvimento de Vila Nova de Foz Côa e de toda a região envolvente”, os professores exigem “a paragem imediata das obras da barragem”.

Dois catadriáticos espanhóis enviaram, entre tanto cartas a Mário Soares, expressando as mesmas preocupações. Josep Pericot, professor de Pré-História numa universidade de Barcelona e membro de várias comissões ligadas à arte do Paleolítico, dependentes da UNESCO esclarece que “Portugal tem nas suas mãos um dos mais valiosos tesouros mundiais de arte do Paleolítico, uma novidade importantíssima que deve ser conservada acima de outros interesses”. Este catadriático termina a sua misiva solicitando a Soares que “estabeleça as medidas oportunas para a conservação ‘in situ’ das gravuras de Vale do Côa, condição que passa por impedir a sua inundação, que as destruiria irremediavelmente”.

Por sua vez, Valentín Boullé, catadriático de Pré-História na Universidade de Valência, refere que “as manifestações rupestres localizadas no Côa constituem um dos conjuntos de arte paleolítica de maior importância até agora descobertos na Europa”, acrescentando que “as representações paleolíticas das grutas Cosquer (Marcelha) e Chauvet (Ardèche) não podem colocar-se acima das de Vila Nova de Foz Côa”.

Pedro Garcias

Figure 3.12 The struggle to preserve the Côa art — *O Público*/February 4, 1995.

Courtesy: L. Luis

Following national elections in 1995, a new government led by Prime Minister António Guterres was formed, and the dam building was halted, with public funds used to compensate the dam contractor.¹⁰¹ This was the first time a major building project was stopped in order to preserve a rock art site. In 1998, the Côa Valley park was listed as a UNESCO World Heritage site, and, in 2010, Siega Verde was incorporated in the listing. In addition to its archaeological and art historical significance, the Côa Valley story provides a valuable lesson in how cultural heritage can be successfully preserved when there is broad level of local, national, and global attention.

Regional Perspectives

Summarizing the rock art and portable art dated to the Upper Paleolithic of Iberia is well outside the scope of this book. The corpus of sites, images, and

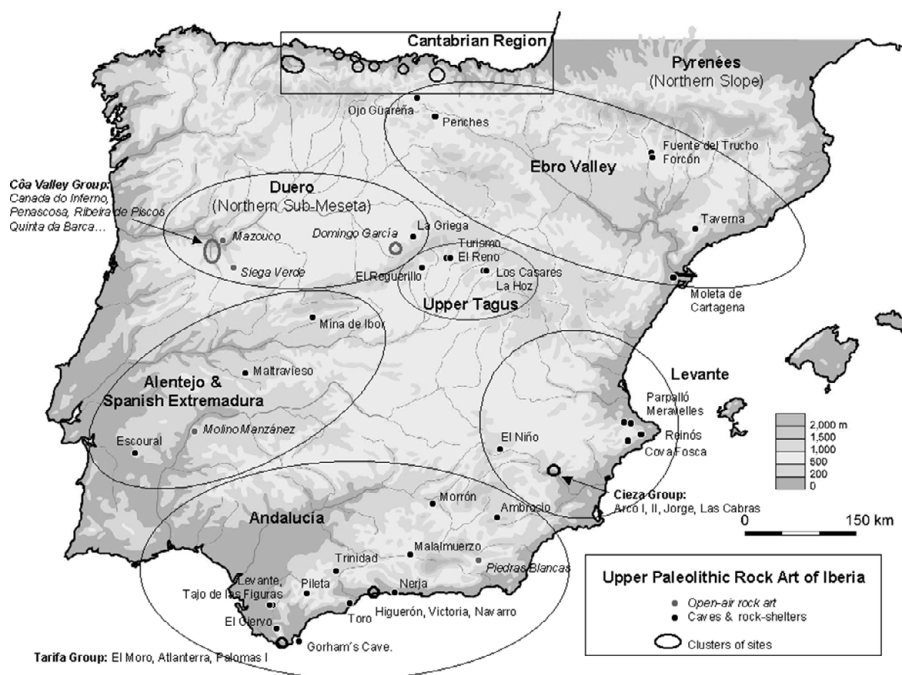


Figure 3.13 Upper Paleolithic art regions.

Courtesy: Cesar Gonzalez Sainz

objects is vast and new finds emerge each year. There are (as of 2018) 245 Upper Paleolithic art sites known in Spain and Portugal.¹⁰² To put this in perspective, there are over 185 sites known in France, an area slightly smaller than the Iberian Peninsula. What follows is an overview of the key research developments based on new dating or analytical methods in the seven main regions where Upper Paleolithic art is known. These are: 1. Vasco-Cantabria, 2. Douro/Duero, 3. Ebro valley, 4. Upper Tagus, 5. Alentejo and Spanish Extremadura, 6. Levante, and 7. Andalucia (Figure 3.13).

Vasco-Cantabria

More than half of Iberian Upper Paleolithic art known comes from the Vasco-Cantabrian region.¹⁰³ This was likely due to its ecological diversity, which made it a demographic refugium during the LGM. Its karstic landscape and the taphonomic processes that help preserve art in these closed contexts are also important factors. More sites are found in the western (Asturias) and central (Cantabria) zones, where there is an open coastal plain more conducive to foraging practices separate the mountains from the Bay of Biscay, than the eastern Basque zone, where the mountains often extend to the coast. However, recent surveys in the Basque area suggest that this picture may be a larger artifact of research history.¹⁰⁴

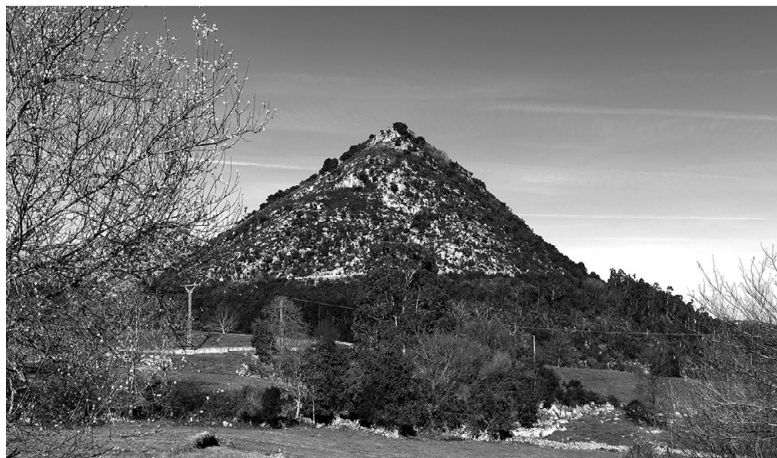
Most of the Paleolithic art is realistic and figurative, but nonfigurative images, such as disks, are also known. Bison, horses, ibex, and large cervids dominate the walls of caves, as well as portable objects. Overall, there is a trend toward more complexity in imagery over time, particularly when contrasting art of the Aurignacian, Gravettian, and Solutrean with the Magdalenian. But, there is also more variability within a given time than previously recognized. During the Magdalenian, Iberian cave art became more “internationalized,” as it displays more similarity to the French Pyrenees and Aquitaine than in earlier periods.¹⁰⁵

Other than Altamira, some of the most significant Upper Paleolithic cave art sites in the region and perhaps in all of Iberia are found at Monte Castillo. This conical mountain overlooking the Pas River houses five spectacular caves with Paleolithic art: El Castillo, La Pasiega, Las Monedas, Las Chimeneas, and La Cantera (Figure 3.14). El Castillo is one of the richest of these caves in its art and archaeology. It was first discovered and investigated by Alcalde del Río in 1903, and later by Obermaier and Wernet, with the support of Prince Alberto I of Monaco and the Instituto de Paleontología Humana de París (Paris Institute of Human Paleontology). Excavations were interrupted during World War I, the Spanish Civil War, and World War II, and resumed in the 1980s under the direction of Victoria Cabrera (1951–2004) and Federico Bernaldo de Quirós.¹⁰⁶ Within the cave’s 20 m of stratigraphy are levels dating to the Middle Ages, Chalcolithic, Azilian, and Paleolithic. The Paleolithic levels include deposits with lithics of the Magdalenian, Solutrean, Gravettian, Aurignacian, and Mousterian, with Acheulean tools at the basal level. Its Magdalenian level produced objects of portable art, including engraved scapulae with images of red deer hinds. Within the Aurignacian levels was a bear canine pendant and worked bone tools.¹⁰⁷ Accompanying the occupational sequence at El Castillo is cave art spanning thousands of years. Indeed, the cave could be considered “an encyclopedia of Paleolithic cave art.”¹⁰⁸ Its walls are covered with paintings and engravings of diverse animals, including aurochs, ibex, horses, and bison, but perhaps the most significant art from the site, in terms of the broader understandings of human evolution, are the red disks and hand stencils dated by uranium-series to 35–40 kya and made either by Neanderthals or AMH, as discussed in Chapter 2 (see Plate 1).

The art at La Pasiega has a similarly long history, with one of the images (a scalariform) providing some of the first definitive evidence for Neanderthal art.¹⁰⁹ La Pasiega was discovered in 1911, some years after El Castillo, and first excavated by Breuil, Obermaier, and Alcalde del Río.¹¹⁰

In recent years, one of the most dramatic discoveries of new cave art in the Vasco-Cantabrian region has been La Garma. This cave system is associated with a number of occupations, burials, and art that dates not only to the Paleolithic, but also to the Mesolithic, Chalcolithic, and Bronze Age.¹¹¹ The Lower Gallery of the cave complex, discovered in 1995, has been the subject of

(a)



(b)

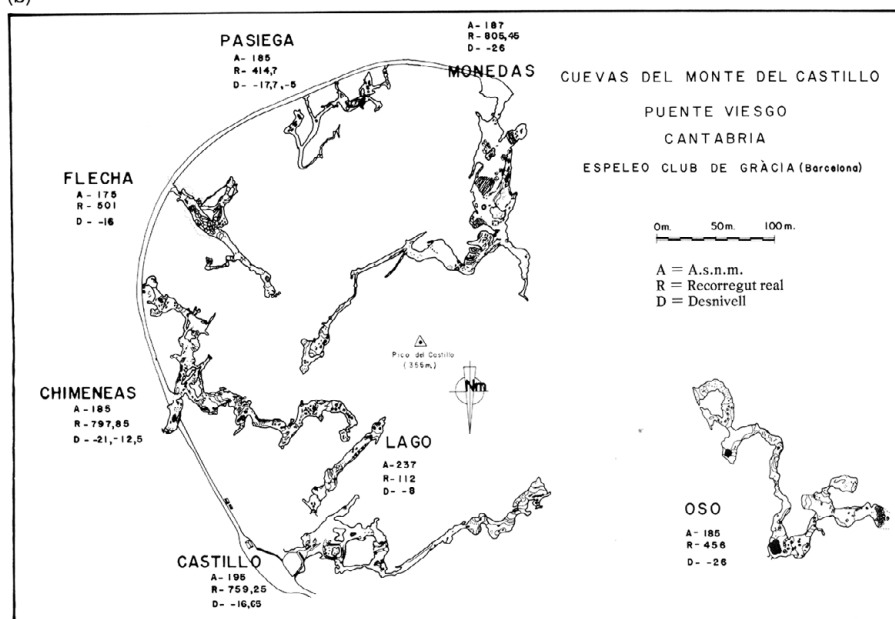


Figure 3.14 Monte Castillo showing (a) its conical form; (b) the location of caves. (c) Bison of Pyrenaean style, El Castillo. A.s.n.m., altitude above sea level; D, difference in elevation; R, actual length of route.

Photos: (a) Jorge Fernández Bolado/© Consejería de Educación, Cultura y Deporte. Gobierno de Cantabria. (b) Courtesy: Espeleo Club de Gràcia and R. Ontañón. (c) Pedro Saura Ramos/Courtesy: Consejería de Educación, Cultura y Deporte. Gobierno de Cantabria.

(c)



Figure 3.14 (cont.)

the most intensive excavations. There, an exceptionally preserved cave floor dated to the Magdalenian, with evidence of residential use (huts, hearths, etc.) was identified. Art of diverse forms was also found. The portable art included perforated batons, plaquettes, and pendants. Some of the most striking objects are an aurochs phalanx carved with an image of an aurochs and a backward-facing ibex carved on a bovine rib (Figure 3.15). Another intriguing discovery in the gallery (Zone IV) was a set of nine cave lion (*Panthera spelaea*) phalanges, dated to 14,800 cal BC, which also had wear and cut marks. No other cave lion fossil remains were found, so it appears that the cave lion was skinned for its pelt.¹¹² La Garma is one of the few Pleistocene sites known with evidence for the use of lion hides. Archaeologists are debating whether to open La Garma to the public and, if so, how access will be controlled.

In the western part of the Vasco-Cantabrian zone are the caves of Tito Bustillo, El Pindal, Covaciella, and Llonín, all UNESCO World Heritage sites. Tito Bustillo is a 700 m-long gallery with a rich collection of zoomorphic and anthropomorphic paintings, including the evocative Chamber of the Vulvas (Figure 3.16), as well as portable art.¹¹³ Calcite layers below and above the anthropomorphs were U-Th dated to between 36 and 30 kya. Over forty additional radiocarbon dates of the cave pigments and materials from associated archaeological contexts within the

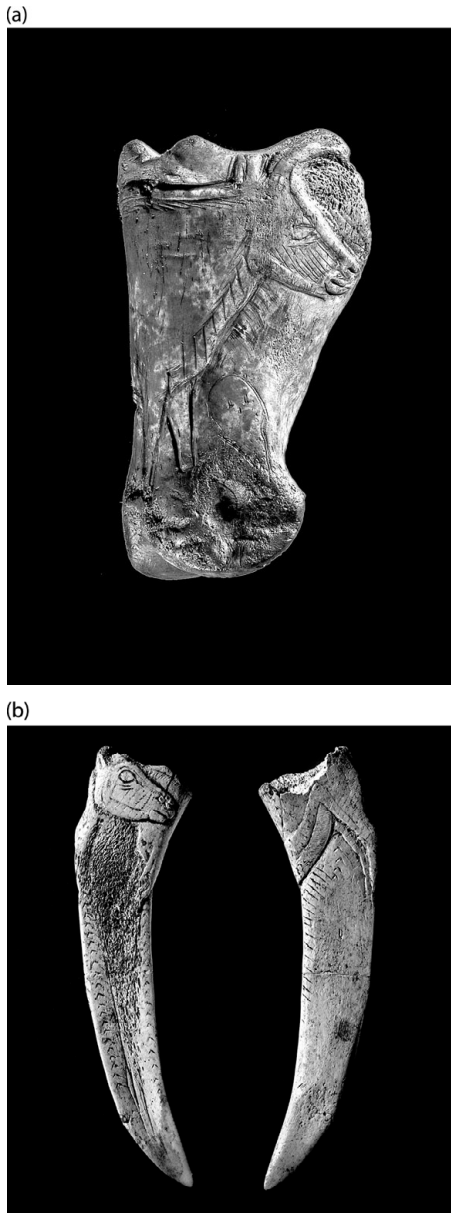


Figure 3.15 La Garma portable art. (a) Aurochs phalanx engraved with three figures: male aurochs, an arrow-shaped sign and an anthropomorphic figure. (b) A spatula decorated with the figure of an ibex was found next to the cave wall. It was made from a bovine rib, and its curved, sharpened end clearly shows signs of its use. It was decorated with ochre, which remained incrustated in the small angled fissures. In the upper part, an ibex is represented on both sides of the spatula.

Photos: Pedro Saura Ramos; courtesy: Museo de Prehistoria y Arqueología de Cantabria



Figure 3.16 Tito Bustillo, Chamber of the Vulvas.

Courtesy: Tito Bustillo Cave Art Center

cave indicate a long history of painting and use of the cave.¹¹⁴ Recent work at El Pindal, one of the earliest of the caves in the region to be discovered and investigated,¹¹⁵ has been dedicated to photorealistic 3D models of the cave imagery integrating a laser scanner and digital camera.¹¹⁶ A synthetic volume on the art and archaeology of Covaciella reveals the richness of the site as well as the close relationship between the art of Cantabrian Spain and Pyrenean France.¹¹⁷

To the east, in the Basque country, are the sites of Ekain, Isturitz, Atxurra, Altxerri, Armintxe, Labeko Koba, Santimamiñe, and Arlanpe, among others.¹¹⁸ Although, for a long time, few caves with art were known in the Basque region, such that it was thought there was a “Basque void,” the picture has begun to change dramatically as a result of targeted surveys. For example, seventeen new decorated caves were discovered in the period between 2010 and 2017, while only fifteen sites had been identified in over 100 years, between 1900 and 2009.¹¹⁹ First studied by José Miguel de Barandiarán in the 1960s and 1970s, Ekain is famous for its spectacular horse and bear paintings dated to the Magdalenian (Plate 2). It also has evidence for sporadic and seasonal occupation near the cave’s entrance between the Chatelperronian and Azilian.¹²⁰ As at Altamira, a replica was constructed near the original cave, which is open to the public.¹²¹ Analyses of the black pigment used to paint the horses and bear indicate the use of an unusual form of manganese oxide (with groutite), which is rare in the Basque country.¹²² Although largely dating to the Magdalenian, the cave complex of Altxerri includes art dated to the Aurignacian, based on radiocarbon dates for associated archaeological and geological deposits and stylistic comparison to other dated art.¹²³ A pebble with engraved lines from Labeko Koba is also argued to date to the Aurignacian.¹²⁴ The small cave of Arlanpe, where Middle Paleolithic hand axes and Levallois tools were recovered, also yielded a block of engraved limestone, which some archaeologists have interpreted as a “Venus” figure characteristic of the Middle Magdalenian.¹²⁵ Recent discoveries in the Basque region have provided exciting insights into visual expression during the Upper Paleolithic and likely promise further



Figure 3.17 Magdalenian-style bison modeled in clay from Aitzbitarte IV.

From: Garate Maidagan 2018, fig. 13; courtesy: Diego Garate

surprises in the future.¹²⁶ These include Atxurra cave, with around 100 Magdalenian engravings and paintings depicting horses, ibex, and deer, which were found associated with floors with hearths. At Armintxe, paintings of horses, ibex, bison, and – unlike other sites in the region – two felines (lions?) were discovered. At Aitzbitarte IV, a bison was fashioned in clay on the cave wall, which likely dates to the Magdalenian (Figure 3.17).

Although without art on its walls, some sites in the Vasco-Cantabrian region appear to have been religious sanctuaries¹²⁷ or shrines, such as El Juyo.¹²⁸ Dated to the Magdalenian ca. 14,000 BP, the shrine at El Juyo has two levels. The first level was made up of a ring of stones, in which ancient peoples placed limpets, periwinkles, sand, red and roe deer bones, ochre, and an antler tine, among other items. On top of this level, a mound was built, which was made of earth from the cave (and included ochre and animal bones) and capped by clay. Associated with this level was a 14-inch tall limestone “face” (which appears to be a half man/half feline) and large stone altar. The discovery of the “sanctuary” at El Juyo was interpreted as early evidence of religious behavior.

Douro/Duero Valley

To the south is the Douro/Duero Valley, where Upper Paleolithic art was discovered along the Côa Valley, Siega Verde,¹²⁹ Mazouco,¹³⁰ and Domingo García.¹³¹ As discussed earlier, these sites are distinctive from those in the Vasco-Cantabrian region as they are open-air sites. Open-air rock art sites in southwest Europe are exceedingly rare. Indeed, Mazouco and Domingo Garcia were some of the first open-air Paleolithic art sites discovered in Europe, and they were only



Figure 3.18 Animals in motion in the Côa Valley. Quinta da Barca-Panel 3.

Photo: A. M. Baptista, © Fundação Côa Parque

identified in the 1980s – nearly 100 years after Altamira. On the sheer schist cliffs of this region, Paleolithic artists engraved, pecked, and incised the animals they were familiar with and hunted, including equids, cervids, bovids, and caprines, although they sometimes depicted humans. The imagery of the Douro sites is stylistically comparable to paintings in caves in the Vasco-Cantabrian region. Open-air art suggests a different function and audience than cave art. While the dark and enclosed spaces of caves were thought to be conducive to rites of passage that were private or involved small groups of people, open-air art may have been used to mark territories to a more public audience.¹³² By virtue of its context, open-air art also creates distinctive problems with respect to preservation and access. Indeed, the rarity of this art may be, in part, a function of its vulnerability to weathering and human disturbance. Notably, this region is one of the least developed and populated in Iberia, which may partially account for its preservation.

The Côa Valley landscape was a core zone of Upper Paleolithic art. More than 500 figures were engraved along 17 km of the Côa River and its tributaries.¹³³ The Côa Valley complex dates to between the Gravettian to Late Magdalenian, based on radiocarbon dates of associated occupations and stylistic comparisons. It is notable for its depictions of animals in motion, in which artists drew heads in different positions on the same body, such as the male ibex (*Capra pyrenaica*) from Quinta da Barca-Panel 3 (Figure 3.18) and the horse at Penascosa-Rocha 4. The Côa art is also distinctive for its absence of cold-weather animals, in contrast to more northerly sites in the Vasco-Cantabrian

region. Its artists employed a range of different techniques, with deep engraving and pecking generally associated with the oldest images, and incisions used for the later works. Because of its open-air nature and vulnerability to vandalism, access is controlled by guided visits. Nonetheless, vandalism is a problem.¹³⁴

Some 80 km to the southeast of the Côa Valley is Siega Verde. Extending ca. 1 km along the Agueda River, another tributary of the Douro/Duero, Siega Verde is made up of over 400 pecked and incised images dated to the Upper Paleolithic, such as aurochs and horse. Siega Verde was included on the Côa Valley World Heritage list in 2010.

In 1992, another small set of engravings was discovered at Domingo García in a series of clusters, including those at Cerro de San Isidro, Canteras, and Dehesa de Carbonero.¹³⁵ They depict equids, cervids, bovids, and caprines.

Ebro Valley

The Ebro Valley was an important area for the history of Neanderthals and modern humans (see [Chapter 2](#)), but it is also a landscape where Upper Paleolithic art was created.¹³⁶ Once viewed as a “research desert,” over thirty sites dated to the Magdalenian are now known, some with art. One of the most intriguing is the cave of Abauntz, with occupation from the Mousterian to Bronze Age. Within its two AMS-dated Magdalenian levels (Middle and Upper) were found portable art, bone tools, and decorated spatulae. Despite the sparse lithic and faunal remains of its Late Magdalenian level, dated to 13,660 cal BP, suggestive of a low-density occupation, five decorated stones were recovered. One of these stones, made of carbonate siltstone, depicts what appears to be a kind of landscape map ([Figure 3.19](#)). It is ca. 15 cm long, and its surfaces are covered with engraved animals (including deer and ibex), wavy lines (“meandering rivers”), concentric circles (“flooded zones”), and a V-shaped peak similar in form to the mountain (San Gregorio) that can be seen from the cave.¹³⁷ If indeed a map, it provides a window into the ways that people used material culture during the Magdalenian to plan or organize their hunting or to tell stories.

Along eastern coastal Spain, cave art is absent, despite intense research and the presence of abundant caves. Another form of expressive art, however, has been documented. This is a musical instrument – an aerophone – found at Davant Pau and dated to 23,000 cal BP.¹³⁸ Made from a bird ulna, 4.24 cm long, and with one perforation along its length, it is comparable to flutes with multiple holes found at Hohle Fels, in Germany, and Isturitz, in French Basque country. These instruments remind us of the importance of the musical arts in hunting or in ritual practices for hunting and foraging peoples.

Upper Tagus

Upper Paleolithic engravings and paintings (in red and black) are known in this region from the cave sites of Los Casares, La Hoz, El Ruguerillo,

El Turismo,¹³⁹ and El Reno.¹⁴⁰ Their imagery shares similarities with those of the Douro/Duero, but also depict cold-weather animals, such as bison, reindeer, wolverine, and wooly rhinoceros.¹⁴¹

Alentejo and Spanish Extremadura

Although Upper Paleolithic art is not found in abundance in the region, as there are few caves or large expanses of cliff faces, there are exceptions, with the cave of Escoural being the most notable.¹⁴² Escoural was the first site in Portugal to be identified with Upper Paleolithic art. Manuel Farinha dos Santos (1923–2001) was the first archaeologist to study the cave and its art in 1963. The limestone cave is located in a region where karstic formations are rare. The walls of Escoural were painted and engraved with more than 100

(a)

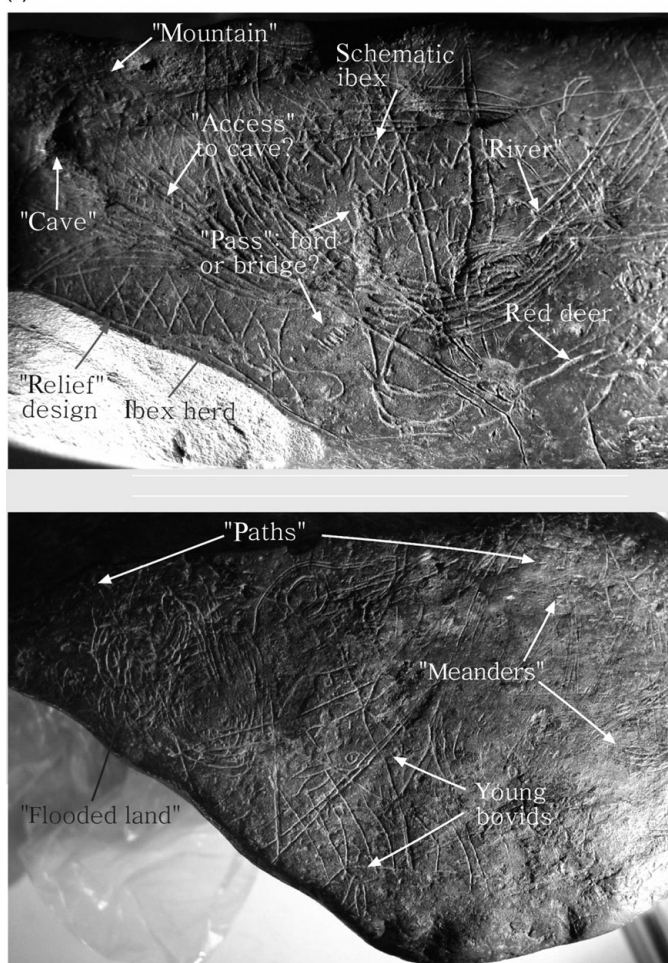


Figure 3.19 (a, b) Block 1 from Abauntz.

Courtesy: Rafael Domingo Martínez and Pilar Utrilla

(b)

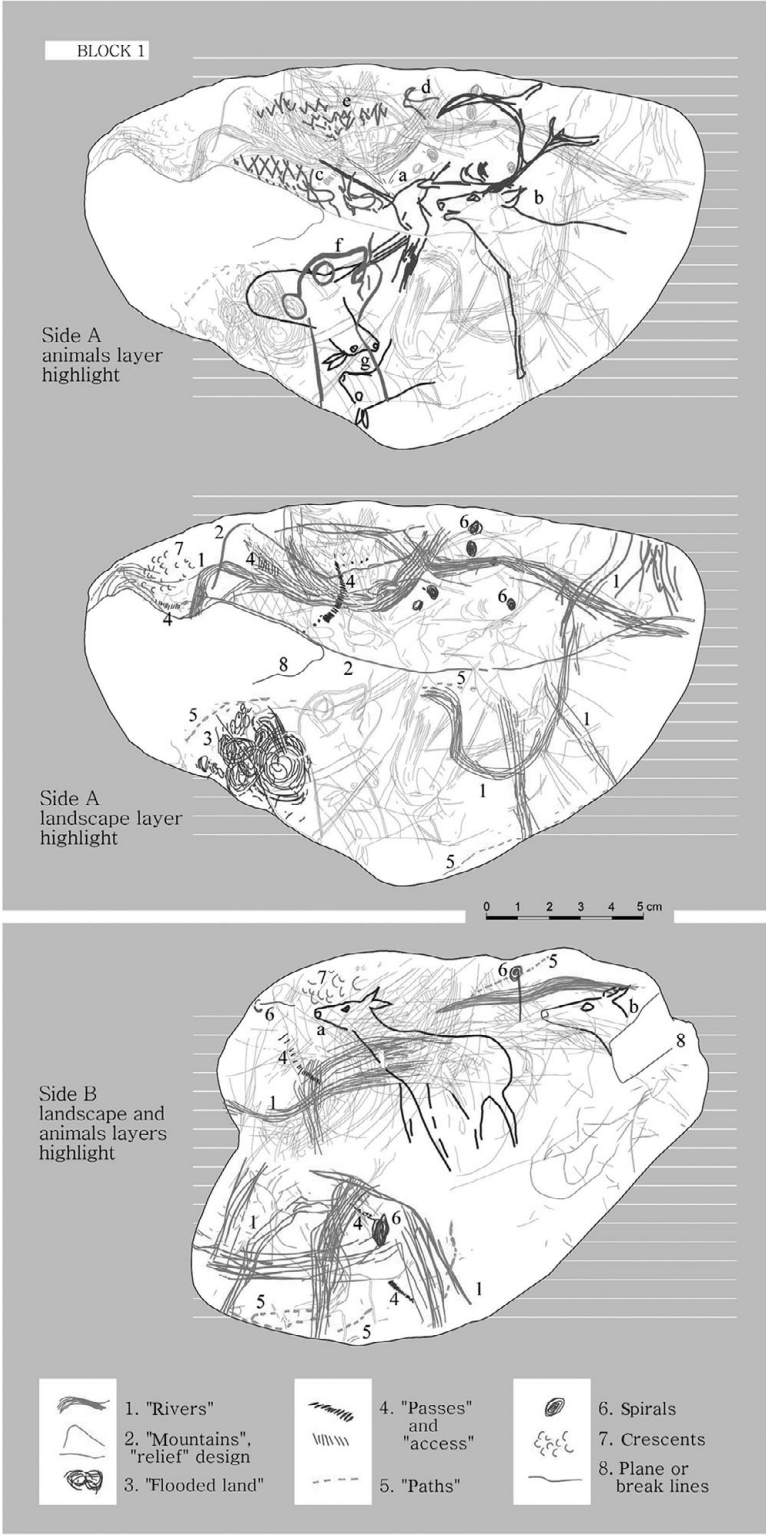


Figure 3.19 (cont.)



Figure 3.20 Escoural horse engravings.

Photo: Manuel Ribeiro/Courtesy: A. C. Araújo

animals, mainly horses (Figure 3.20), and other motifs that likely date to the Solutrean, although there are images that pre- and post-date the Solutrean. One of the most distinctive qualities of the cave imagery at Escoural is the predominance of nonfigurative art, notably dots and lines. Escoural was an important place for millennia, as it was used later by Neolithic peoples to bury their dead. The cave was then closed, and in the third millennium BCE, a settlement and tholos tomb were constructed next to the cave.¹⁴³

Levante

There are relatively few Upper Paleolithic art sites on the Levantine coast, although their numbers have been increasing in recent decades.¹⁴⁴ The most famous is the cave of Parpalló, with levels dating to the Gravettian, Solutrean, and Magdalenian. In 1872, Vilanova, the same scholar who advocated for the antiquity of Altamira, brought knowledge of Parpalló to the scientific community. Breuil and later Pericot excavated the site. Parietal art has been found at Parpalló depicting horses and lines, but it is best known for its outstanding assemblage of more than 5,600 engraved and/or painted limestone plaquettes. Dated to between 26,000 and 11,000 BP, these plaquettes primarily depict geometric motifs but also animals and some possible anthropomorphs (Figure 3.21).¹⁴⁵ Analyses (energy dispersive X-ray fluorescence) of the black paints used to decorate the plaquettes revealed that they were made of the same manganese- and wood charcoal-based pigments used to paint cave art in Solutrean sites, such as La Pileta in Andalusia.¹⁴⁶ The unusual concentration of

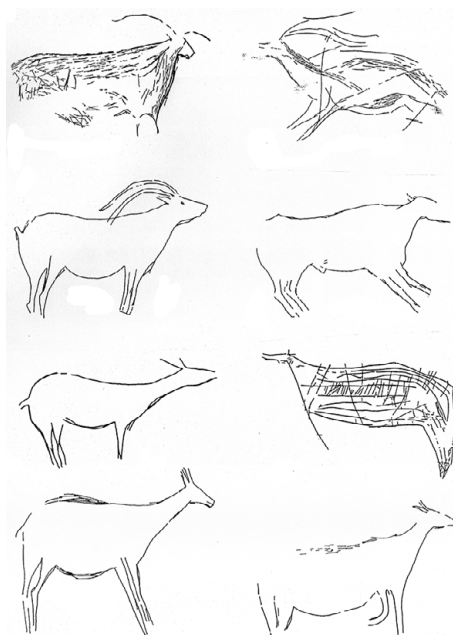


Figure 3.21 Zoomorphic images, Solutrean, on Parpalló plaquettes.

From: Villaverde 1994, fig. 42

plaquettes and their stylistic variation suggest that Parpalló may have been an important meeting place of diverse social groups over a long period of time, where collective rituals, information exchange, and marriages took place, and that the plaquettes facilitated these interactions.¹⁴⁷ Photogrammetry and laser scanning were carried out to document the cave and record the small engravings found on its walls.¹⁴⁸ However, the cave is not only significant for its visual imagery. The cave appears to have special acoustic properties due to its large opening, which allows for better intelligibility than at other sites. This quality may have made it a desirable location for social gatherings and rituals.¹⁴⁹

Andalucía

Art is found throughout the karstic landscape of Andalucía, where it dates from the Gravettian, Solutrean, and Magdalenian.¹⁵⁰ The best-known sites are Ardales, La Pileta, and Nerja. The cave of Ardales was discovered in 1821 after an earthquake opened what had been a sealed entrance. In 1860, a wealthy Sevillana named Doña Trinidad Grund purchased the cave and had stairs built so that tourists could more easily view the paintings (the cave is also known as the Cueva de Doña Trinidad). In this way, Ardales became the first touristic cave of Spain. Doña Trinidad had envisioned tourists visiting Ardales in conjunction with the nearby thermal baths of Carratraca, which she also owned.¹⁵¹ Breuil studied and later published the cave art at Ardales.¹⁵²

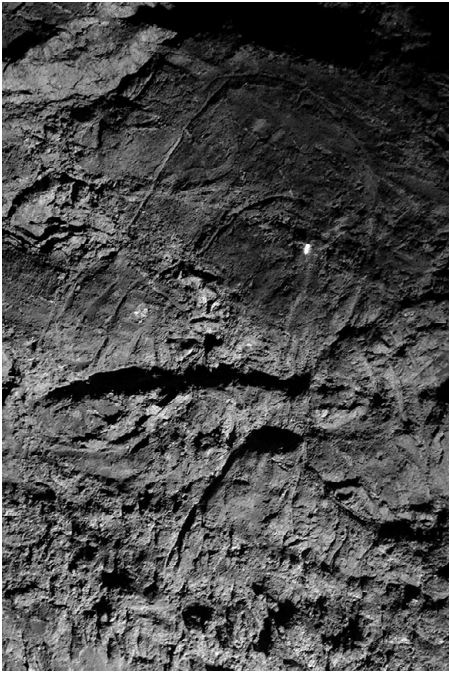


Figure 3.22 Ardales, flamingo.

Photo: K. Lillios, 2017; courtesy: Pedro Cantalejo

Following a long period of neglect under the Franco dictatorship, research on the cave resumed in 1985. The cave is divided into five sectors, on whose walls are primarily depicted signs (such as serpentiforms) but also animals (deer, horse, fish, and even a flamingo [Figure 3.22]), anthropomorphs (including females), and fingerprints and negative handprints with bent (or missing?) fingers. Images were incised and/or painted in red, black, yellow, and brown. Interdisciplinary investigations have been undertaken to better understand the site's geoarchaeology and dating.¹⁵³

Just 45 km southwest of Ardales is La Pileta.¹⁵⁴ The British soldier and ornithologist William Willoughby Cole Verner (1852–1922) was informed of the cave in 1909 by José Bullón, a farmer who lived in the vicinity and collected bat guano from the cave. Bullón noted the black charcoal drawings on the cave walls, but believed the Moors painted them, which was a common understanding of ancient art, objects, and sites at the time. Verner's 1911 reports of La Pileta in *Saturday Review* drew the attention of Breuil, who visited it shortly afterward, accompanied by Obermaier, Paul Wernert (1889–1972), and Juan Cabré Aguiló (1882–1947).¹⁵⁵ The artists at La Pileta depicted a range of animals, including caprids, equids, cervids, bovids, and fish. Also found are diverse signs, including serpentiforms, spirals, and spider-like forms.

About 1 km from the Mediterranean coast and frequented by thousands of tourists each year seeking the sun and beaches of southern Spain is the vast cave complex of Nerja. Extending for nearly 5 km and covering an area of around

35,000 m², it is situated in dolomitic marble. Local villagers had long known of the cave openings, but it wasn't until 1959, when five young boys in the area who had spent the night watching bats flying in and out of a small opening in the cave, removed the stalagmites that blocked another entrance and entered the cave that the immensity of the site and later its art were first recognized.¹⁵⁶ Excavations conducted by Pellicer and Jordá, and specialist studies, including direct dating of paint pigments and carbonate deposits associated with them, have shown that Nerja was occupied during the Epipaleolithic, Neolithic, and Chalcolithic, as well as the Upper Paleolithic.¹⁵⁷ Recent investigations at the site have focused on paleoclimatic reconstructions of the Pleistocene–Holocene levels through analyses of the fauna, sediments, and charcoal.¹⁵⁸ Nerja I is the part of the cave that tourists can easily visit (and in which the annual Nerja “International Festival of Music and Dance” is held).¹⁵⁹ Nerja II is made up of the Upper Gallery and New Gallery and is not open to the public as they contain much of the paintings. Among the animals depicted are equids, cervids, caprids, and pisciforms (possibly dolphins or seals). Also found are rectilinear designs, cruciforms, and dots. The long (5 m high) calcite folding at Nerja known as ‘The Organ’ was not only utilized as a surface for depicting images (some of which were very difficult to access), but may also have been used as a lithophone.¹⁶⁰ Some edges were apparently broken and had evidence of wear.

SOME CONCLUSIONS

The millennia between 42 and 35 kya were pivotal in the history of Iberia. Neanderthals disappeared as a species (or subspecies), and the first AMH arrived from northern and western Europe over the Pyrenees. The interactions between Neanderthals and AMH in Iberia have yet to be fully articulated, but the evidence, such as the Lagar Velho child, seems compelling for genetic exchange in at least some zones. Neanderthals and AMH shared many cultural practices, such as complex lithic technologies, the use of fire, and burial of their dead, so it should not be surprising that Neanderthals also expressed themselves artistically. It is indisputable, however, that the art of AMH was dramatically more abundant and variable, although found in regional clusters (Vasco-Cantabria, Douro/Duero, Andalucia, Levante). Differential intensity of research may partially explain some of the current regional gaps, given the recent findings of cave art following intensive surveys in the Basque region, which had been considered to be a void. As revolutionary as the biological and cultural developments of the Middle to Upper Paleolithic are, they took place over a vast span of time from the perspective of human lifeways. Future improvements in chronological resolution will hopefully enhance our understanding of the precise timing and pulses of demographic, climatic, and economic changes and their interrelationships at the micro- and macro-regional scales.

ENDNOTES

- 1 Straus *et al.* 1993; Straus 1996a, 2005, 2018a; Zilhão and Trinkaus 2002; Zilhão 2006; Maroto *et al.* 2012; Schmidt *et al.* 2012; Wood *et al.* 2013b, 2014.
- 2 Wood *et al.* 2014.
- 3 Sepulchre *et al.* 2007.
- 4 Conkey *et al.* 1980.
- 5 de Sonnevile-Bordes and Perrot 1954, 1955, 1956.
- 6 Straus 1992:40–41; Straus *et al.* 2000.
- 7 Pereira *et al.* 2012.
- 8 Maíllo-Fernández 2013:110.
- 9 Straus *et al.* 2000; Wood *et al.* 2014.
- 10 Straus *et al.* 2000.
- 11 Zilhão 2006; Morales *et al.* 2016.
- 12 Mujika Alustiza 2000; Arrizabalaga Valbuena *et al.* 2003.
- 13 Hublin *et al.* 2012.
- 14 Wood *et al.* 2014.
- 15 Maíllo-Fernández 2013:112; Tejero *et al.* 2005.
- 16 Tejero and Bernaldo de Quirós 2007–2008.
- 17 d’Errico *et al.* 1998; Mellars 1999.
- 18 González Echegaray 1980; Gravina *et al.* 2005.
- 19 Menéndez *et al.* 2005.
- 20 For El Pendo: Montes and Sanguino 2001; for La Güelga: Menéndez *et al.* 2018.
- 21 Aubry *et al.* 2006.
- 22 Thacker 2001; Zilhão and Trinkaus 2002.
- 23 Bicho *et al.* 2015a.
- 24 Maíllo-Fernández 2013:109.
- 25 Jones 2013, fig. 2.
- 26 Garate Maidagan 2018:169.
- 27 Marreiros *et al.* 2015, 2016.
- 28 Calvo Turrientes *et al.* 2016.
- 29 García-Diez and Ochoa Fraile 2012; see also later discussion.
- 30 Clark *et al.* 2009; for current dates of Greenland Stadial 2, see Rasmussen *et al.* 2014). Useful syntheses of current thinking on the Solutrean can be found in Ripoll López *et al.* 2012 and volume 17, issue 4 of *Journal of Anthropological Research*.
- 31 Jones 2013, fig. 3.
- 32 Tallavaara *et al.* 2015.
- 33 Schmidt 2015.
- 34 Zilhão 1987; Straus *et al.* 2000; Cascalheira and Bicho 2015.

- 35 Straus and González 2012; Utrilla *et al.* 2012. Regional syntheses on the Magdalenian in Iberia can be found in Straus *et al.* 2012.
- 36 Straus *et al.* 2000.
- 37 Pétilion 2008.
- 38 Fullola *et al.* 2012; Jones 2013, fig. 4.
- 39 Straus *et al.* 2012.
- 40 McClure and Schmich 2009; Jones 2013, 2015.
- 41 Though see Allué *et al.* 2010.
- 42 Manne *et al.* 2012.
- 43 Jones 2013.
- 44 Bicho 2009:186.
- 45 Manne *et al.* 2012.
- 46 Hockett and Bicho 2000; Bicho *et al.* 2006.
- 47 Straus 2009:288–289.
- 48 Córtes-Sánchez *et al.* 2008.
- 49 Arrizabalaga *et al.* 2003.
- 50 Almeida *et al.* 2009.
- 51 See de Balbín Berhmann 2015 for an inventory of the human remains known for Upper Paleolithic Iberia, including those that may be burials.
- 52 Freeman and González Echegaray 1970; Straus 1992:85–87.
- 53 Duarte *et al.* 1999; Zilhão and Trinkaus 2002.
- 54 Sankararaman *et al.* 2012; Higham *et al.* 2014.
- 55 Arsuaga Ferreras *et al.* 2002.
- 56 Aura Tortosa *et al.* 1998.
- 57 Balbín Berhmann 2015:12.
- 58 Straus *et al.* 2015.
- 59 Fu *et al.* 2016.
- 60 Köhl *et al.* 2016.
- 61 van Leeuwen *et al.* 2017.
- 62 Conkey 1997; Nowell 2006.
- 63 Ochoa and García-Díez 2018.
- 64 For the most comprehensive and up-to-date summary of Iberian Paleolithic art, with attention to regional diversity, see Bicho *et al.* 2007. Color images of Iberian rock art sites can be found in Bahn (2016).
- 65 Darwin 1859.
- 66 Ripoll Perelló 1997; Madariaga de la Campa 2000; Lasheras and de las Heras 2004; Moro Abadía and Pelayo 2010.
- 67 García Guinea 1988; Madariaga de la Campa 2000:21; Lasheras and de las Heras 2004:13.
- 68 Sanz de Sautuola 1880.
- 69 Lewis-Williams 2002:31; Bahn 2016:15.

- 70 Bahn 2016:16.
- 71 Moro Abadía and González Morales 2004.
- 72 Cartailhac 1902.
- 73 Cartailhac and Breuil 1903, 1906.
- 74 Lewis-Williams 2002:32.
- 75 Moro Abadía and Pelayo 2010.
- 76 Breuil and Obermaier 1935.
- 77 Leroi-Gourhan 1965.
- 78 Bernaldo de Quirós 1991.
- 79 Breuil 1952. Although scholars now consider this to be an overly simplistic view, there are examples in North America in which sympathetic magic does, indeed, appear to have been a factor in producing rock art (Keyser and Whitley 2006).
- 80 Conkey *et al.* 1980.
- 81 García-Díez *et al.* 2013.
- 82 Lasheras *et al.* 2012.
- 83 www.altamiraguitars.com.au/about/.
- 84 Parga Dans and Alonso González 2018:181.
- 85 Villar 1984; Sáiz Jiménez *et al.* 2011.
- 86 Kassam 2014.
- 87 Parga Dans and Alonso González 2018.
- 88 Bahn 2017.
- 89 Cuenca-Solana *et al.* 2016.
- 90 Valladas *et al.* 1992; Pike *et al.* 2012; García-Díez *et al.* 2013.
- 91 Alcalde del Río 1906.
- 92 Alcalde del Río *et al.* 1911.
- 93 Bahn 1995; Zilhão 1995, 1997; Zilhão *et al.* 1997.
- 94 Baptista 1999, 2009; Aubry *et al.* 2010, 2012a, 2012b; Reis 2014. A total of over 1,000 images from all time periods have been recorded in the Côa (Reis 2014:fig. 9.2).
- 95 de Balbín Behrmann *et al.* 1991a, 1995.
- 96 For accounts of the debates and struggle surrounding the preservation of the Côa Valley art, see Jorge, 1995a; Zilhão 1997; Gonçalves 2001; Bagarre au barrage, 2013; La bataille du Côa, 2018.
- 97 Phillips *et al.* 1997.
- 98 Bednarik 1995; Watchman 1995.
- 99 Bahn 1995; Zilhão 1995.
- 100 Zilhão *et al.* 1995b. Further dating of the art was provided in 2006 with the excavations at Fariseu, a living site that partially covered one of the art panels. TL dates for burnt lithics from Fariseu returned dates of 14.5 kya, providing a terminus ante quem for the art (Mercier *et al.* 2006; Aubry *et al.* 2014).

- 101 Baptista 2001:237.
- 102 Bahn, personal communication, 2018; Bicho *et al.* 2007. For a comprehensive overview of Iberian Paleolithic art, in the context of the European record, see Bahn 2016.
- 103 Straus 1987; Bicho *et al.* 2007.
- 104 Garate Maidagan 2018.
- 105 Bicho *et al.* 2007.
- 106 Alcalde del Río *et al.* 1911; Cabrera Valdés 1984; Bernaldo de Quirós and Maíllo Fernández 2009; García-Díez and Gutiérrez 2010; Bernaldo de Quirós *et al.* 2010; García-Díez *et al.* 2015; d’Errico *et al.* 2016.
- 107 Tejero & Bernaldo de Quirós 2007–2008.
- 108 García-Díez and Gutiérrez 2010; Pike *et al.* 2012; García-Díaz *et al.* 2015; d’Errico *et al.* 2016:50.
- 109 Hoffinan *et al.* 2018a, 2018b.
- 110 Ochoa *et al.* 2017.
- 111 Arias Cabal *et al.* 1996, 2000; Arias and Ontañón Peredo 2012.
- 112 Cueto *et al.* 2016.
- 113 Moure Romanillo 1989; Polledo González 2011.
- 114 Pike *et al.* 2012; de Balbín Behrmann and Alcolea González 2013.
- 115 Alcalde del Río *et al.* 1911.
- 116 González-Aguilera *et al.* 2011.
- 117 García-Díez *et al.* 2015.
- 118 Garate Maidagan 2018.
- 119 Garate Maidagan 2018:fig. 1.
- 120 Altuna Etxabe 1984.
- 121 www.ekainberri.com/en.
- 122 Chalmin *et al.* 2006.
- 123 Ruiz-Redondo 2014; Ruiz-Redondo *et al.* 2017.
- 124 Arrizabalaga Valbuena *et al.* 2003.
- 125 Rios-Garaizar *et al.* 2011, 2015b.
- 126 Garate Maidagan 2018.
- 127 Arias Cabal 2009.
- 128 Freeman and González Echegaray 1981.
- 129 de Balbín Behrmann *et al.* 1991a, 1995.
- 130 Jorge *et al.* 1981.
- 131 Martín and Moure 1981; Ripoll López and Municio González 1992, 1999.
- 132 de Balbín Behrmann and Devignes 1995.
- 133 Baptista 2001; Fernandes 2003; Reis 2014.
- 134 Fernandes 2004.
- 135 Ripoll López and Municio González 1992, 1999.
- 136 Utrilla *et al.* 2012.
- 137 Utrilla *et al.* 2009.
- 138 Ibáñez-Estévez *et al.* 2015.

- 139 Alcolea *et al.* 1995.
- 140 Alcolea *et al.* 1997, 2000.
- 141 Alcolea and Balbín 2003.
- 142 Farinha dos Santos 1964; Araújo and Lejeune 1995; Silva 2011.
- 143 Gomes *et al.* 1983.
- 144 Villaverde 2015.
- 145 Pericot 1942; Villaverde 1994.
- 146 Roldán *et al.* 2013.
- 147 Villaverde 2001.
- 148 Lerma *et al.* 2010.
- 149 Jiménez González *et al.* 2008.
- 150 Bicho *et al.* 2007.
- 151 Cantalejo Duarte *et al.* 2006.
- 152 Breuil 1921.
- 153 Ramos Muñoz *et al.* 2014.
- 154 Dams 1978.
- 155 Breuil *et al.* 1915.
- 156 Sanchidrián Torti 1994.
- 157 Sanchidrián Torti *et al.* 2017.
- 158 Aura Tortosa *et al.* 2002.
- 159 www.thenerjacaves.com/concert/.
- 160 Dams 1984.

CHAPTER 4

THE CREATION OF NEW WORLDS: THE MESOLITHIC THROUGH MIDDLE NEOLITHIC (11,000–3,500 BCE)

INTRODUCTION

Profound shifts in the relationships between people, animals, objects, and landscapes took place between 11,000 and 3,500 BCE. Over these millennia, the peninsula was home to the last hunters and gatherers and the first farming communities. These first agrarian peoples, who most likely came from the Ligurian coast, brought new subsistence practices, worldviews, and technologies, such as ceramics and polished stone tools. Many settled along Mediterranean Iberia in areas that were sparsely populated by hunter-gatherers, although encounters between these different groups shortly followed. How they interacted is a topic of ongoing debate and discussion, with genetics offering new insights. In many of the same landscapes where these early agriculturalists lived are also the first megaliths. Whether native hunter-gatherers, early farmers, or both groups built these first monuments is not at all clear. The earliest were menhirs, which were likely territorial markers or ritual monuments. Later monuments housed the dead, although they could have also marked the land and served as a focus for non-mortuary rituals. Although archaeologists denote these periods with different names, such as the Early and Middle Neolithic, they increasingly recognize continuities over time. Megalithic burials, for example, continued to be used or modified and new ones built throughout subsequent millennia (and, thus, they will also be discussed in [Chapters 5](#) and [6](#)). Indeed, these monumental structures and the ritual practices related to them seem to have been part and parcel of the agrarian lifeways of Iberian peoples as with other West European peoples at the time, although they also buried their dead in caves and rock-shelters. This chapter also considers the distinctive art in caves and rock-shelters found along the Levantine coast.

Paleoecological research drawing on terrestrial and marine proxies and tethered to absolute dating sequences has shed new light on the cultural processes associated with the Late Pleistocene/Early Holocene transition, with the best of these studies employing multiple proxies. Palynology has played a

dominant role.¹ Well-dated pollen sequences are more abundant in northern Spain, but they also exist for coastal Spain and Portugal.² Investigations of margin sediments and foraminifera have also been important,³ as have charcoal studies, the latter particularly in tracking fire events related to human land use practices.⁴ Archaeologists and geoscientists working in Iberia often use different classification systems for climatic periods. While some use the periodization originally developed for Northern Europe (Allerød, Preboreal, Boreal, Atlantic), others argue that these phases are not always relevant for Southern European sequences and employ alternate schemes (e.g., Younger Dryas/Holocene transition, Early Holocene, Early to Middle Holocene transition, Middle Holocene, Middle/Late Holocene transition, Late Holocene). Given that both classification systems are in use, both are used in this chapter.

These paleoecological studies reveal how different regions underwent different trajectories between the Late Pleistocene and Early Holocene. This is due to their distinctive topographies and climates, but also human practices of burning, farming, grazing, and metallurgy. For example, in the Eurosiberian zone, but also in some parts of the Mediterranean zone, the end of the Pleistocene ca. 11,000 cal BCE (Allerød oscillation) was marked by an increase in *Quercus* (oak) and decline in *Pinus* woodlands and steppic species.⁵ However, in the high altitudes, *Pinus* and *Juniperus* woodlands predominated. A rapid rise in sea levels accompanied these changes,⁶ although the Younger Dryas interrupted this trend. During the Younger Dryas (Dryas III) cold (and dry) spell (10,900–9,700 cal BCE), xerophytes, such as *Artemisia*, *Ephedra*, and *Chenopodiaceae*, expanded. In Mediterranean Iberia throughout the Late Pleistocene and Early Holocene, *Pinus* and *Quercus* characterized the landscape. The transition to the Early Holocene (Preboreal), ca. 9,700 cal BCE, was marked by a dramatic/rapid rise in temperatures. This rise in temperatures led to the flooding of coastlines as well as Upper Paleolithic sites that might have been located along low-lying coasts.⁷ This warming, accompanied by humidity and expansion of the Mediterranean forest, peaked between 7,600 and 6,200 cal BCE.⁸ Around 6,200 cal BC, Atlantic regions underwent an abrupt cooling event.⁹ This event, known as the 8.2 kya event or Bond event 5, resulted from the collapse and melting of the Hudson Ice Dome, which released a massive volume of cold water into the North Atlantic.¹⁰ Middle Holocene (Atlantic) climate conditions followed this event, characterized by higher temperatures, and then ca. 3,500 cal BCE, by more arid conditions.¹¹ However, there was significant variation in the aridity that developed during the Middle Holocene, particularly by latitude. As with so much about the history of the Iberian Peninsula – both climatic and human – it is difficult to generalize.

Four regions are considered in the rough order by which farming was adopted: the Mediterranean (including the Ebro Valley), interior, western façade (Portugal/northwest Spain), and Vasco-Cantabrian coast (Figure 4.1).

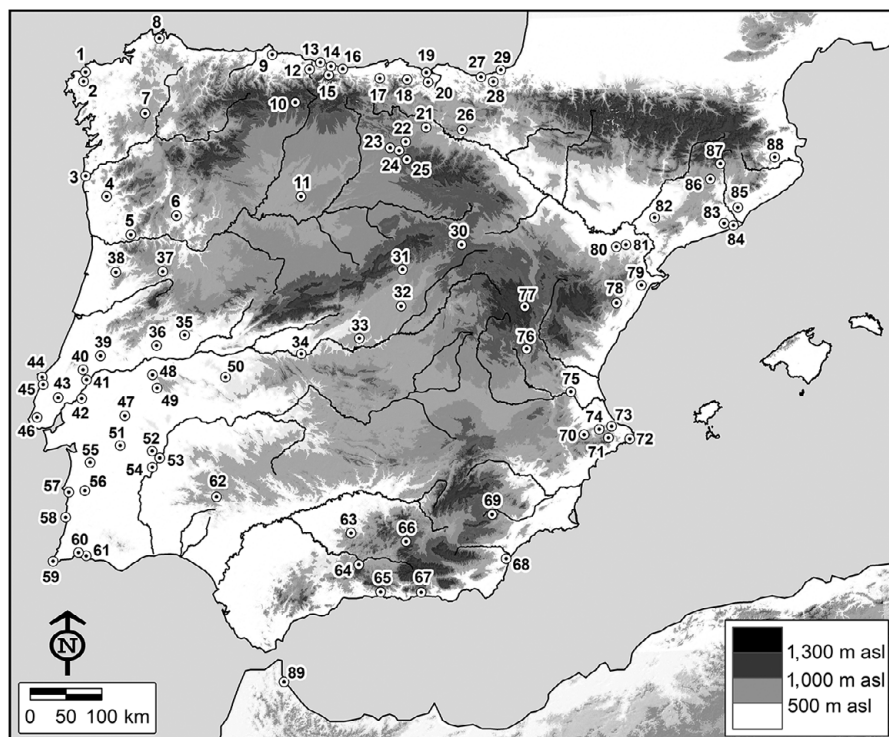


Figure 4.1 Mesolithic through Middle Neolithic sites discussed in the text (key sites). 1. Dombate; 2. Anta de Serramo; 3. Santa Tecla and Vila Praia de Âncora; 4. S. Julião; 5. Outeiro de Ante 3; 6. Buraco da Pala; 7. Coto dos Mouros; 8. Forno dos Mouros; 9. Monte Areo; 10. La Braña-Arintero; 11. El Miradero; 12. Los Azules I; 13. El Pinicial and La Riera; 14. El Alloru and Cueto de la Mina; 15. Los Canes; 16. Molino de Gasparín; 17. El Pendo; 18. El Mirón; 19. Pico Ramos; 20. Arenaza; 21. El Prado; 22. Alto de Reinoso; 23. Los Cascajos; 24. El Níspero; 25. El Portalón; 26. Los Husos I and Peña Larga; 27. Herriko Barra; 28. Marizulo; 29. Jaizkibel; 30. La Peña de la Abuela, La Lámpara, La Revilla and La Sima Ambrona Valley sites); 31. La Higuera; 32. Casa Montero; 33. El Castillejo; 34. Azután; 35. Cegonhas; 36. Vidigal; 37. Carapito I; 38. Antelas; 39. Caldeirão; 40. Lapa de Picareiro; 41. Almonda; 42. Muge sites; 43. Algar do Bom Santo; 44. Casa da Moura; 45. Toledo; 46. Lapiás das Lameiras; 47. Vale d'El Rei and Anta de Cabeceira; 48. Patalou; 49. Meada; 50. El Conejar; 51. Almendres, Vale Maria do Meio, Valada do Mato and Anta Grande do Zambujeiro; 52. Rocha dos Namorados and Anta 2 de Gorginos; 53. Barca do Xerez de Baixo; 54. Poço da Gateira I; 55. Sado sites; 56. Marco Branco; 57. Vale Marim I and Vale Pincel I; 58. Palheirões do Alegria; 59. Cabranosa and Padrão; 60. Castelo Belinho, Quinta da Queimada; 61. Caramujeira I; 62. Pico Centeno; 63. Murciélagos; 64. Cortijo Cevico; 65. Nerja; 66. Carigüela; 67. Murciélagos; 68. Cabecicos Negros; 69. Los Letreros; 70. La Sarsa; 71. Pla de Petracos and Santa Maira; 72. Les Cendres; 73. Barranc de la Palla and El Collado; 74. Cova de l'Or and Tossal de la Roca; 75. La Cocina; 76. Abrigo de los Oculados and Cueva del Tío Modesto; 77. La Losilla; 78. La Valltorta; 79. Abrics de l'Ermiteja; 80. El Pontet; 81. Costalena; 82. Roca dels Moros; 83. Can Sadurní; 84. Gavà; 85. La Bòbila Madurell-Can Gambús; 86. Cardona salt mountain; 87. Ca l'Oliaire; 88. La Draga; 89. Caf Taht el Ghar.

Map: Antonio Blanco-González

HISTORIES

The transition to warmer temperatures associated with the Early Holocene saw a diminishment of the vast territories that human groups exploited and within which they shared cultural expressions, such as art styles. This territorial shift is likely due to the expansion of forests, which fragmented social groups, as well as to the smaller territories that people needed to survive owing to the enrichment of marine and other resources. This section discusses the key archaeological and cultural developments by region between the Late Pleistocene through the Middle Neolithic, up to the construction of the first megaliths.

The Mediterranean

It was on the eastern Mediterranean coast that the first farming migrants with their crops and animals first made contact with indigenous groups. Thus, the historical sequence is substantially different from communities in other regions of Iberia, such as the Atlantic.

Based on changes in lithic assemblages, the Epipaleolithic of Mediterranean Spain is divided into a microlaminar Epipaleolithic (9,500–7,000 cal BCE) and a Geometric Epipaleolithic (or Mesolithic) (7,000–5,000 cal BCE).¹² Sites are often found in caves in steep rocky landscapes, such as Nerja, Santa Maira, Cueva de la Cocina, and Tossal de la Roca, while others were located on low-lying ponds or took the form of shell middens (*concheros*), such as El Collado.

The microlaminar Epipaleolithic shows continuities with the Magdalenian in lithic forms and raw materials, subsistence strategies, and site occupation. Tossal, Santa Maira, and Nerja, for example, were occupied during the Magdalenian as well as microlaminar Epipaleolithic (although the average elevation of sites is generally higher than in the Magdalenian). Rabbit (*Oryctolagus cuniculus*) dominates the faunal assemblages, but analyses of faunal assemblages do not show significant differences between the Magdalenian and microlaminar Epipaleolithic. There was, however, a decrease in burins and bone tools, an increase in backed bladelets, a rarity of geometrics, and scarce art during the microlaminar Epipaleolithic. The Geometric Epipaleolithic/Mesolithic in Valencia, Murcia, and Andalucia is characterized by the appearance of flaked tools and a blade/bladelet industry with geometrics (circle segments and triangles); the latter are often referred to as the Cocina-type Geometric Epipaleolithic. In Catalonia, Sauveterrian-type microliths are found. When compared to the Magdalenian, people hunted a more diverse range of animal species; these included red deer (*Cervus elaphus*), wild boar (*Sus scrofa*), chamois, roe deer, and carnivores. Rabbits continue to make up a significant percentage of the faunal assemblage.

The rarity of shell middens in Mediterranean Spain during the Epipaleolithic and Mesolithic has been explained by coastal flooding during the Early Holocene. Some shell middens are, however, known. These include Nerja¹³ and Santa Maira,¹⁴ although the latter is presently 30 km from the shore, so it probably did not have direct access to coastal resources. At the open-air coastal shell middens of El Collado, fifteen individuals were buried in pits associated with the shell middens.¹⁵ Isotopic studies were carried out on the human and faunal remains.¹⁶ While marine protein constituted an important source of dietary protein (25 percent) for the population, it was considerably less significant than that for Atlantic coastal populations during the Mesolithic, perhaps as a result of different dietary choices or less available resources. A series of radiocarbon dates and Bayesian modeling were also undertaken to understand the site's chronology and relationship to the 8.2 kya event. Analyses of the dates show that El Collado was first in use ca. 7,475–7,300 cal BCE and continued to be used for about 1,100 years. These early dates predate the Muge and Sado shell middens in Portugal, as well as those on the Cantabrian coast.¹⁷ When El Collado's occupational history is examined in relationship to the 8.2 kya event, which in Mediterranean Iberia was associated with aridity and dry northerly winds, the evidence shows that the site was abandoned “during or soon after the 8.2 kya cold event.”¹⁸ Thus, it would seem that climatic factors played a role in the site's occupation.

Mediterranean Iberia is central to understanding the development and spread of agriculture, as it was the stage on which farming groups from the central Mediterranean and their plants (wheat and barley), animals (sheep and goat), and new material culture, including pottery, first arrived and encountered indigenous hunters and gatherers.¹⁹ The earliest dates for domestic animals, plants, and impressed ceramics place their arrival (and possible first encounters) to the mid-sixth millennium cal BCE. These early dates have been derived from sites as far northeast as Catalonia and as far south as Andalucia, and they spread quickly to the interior. As they are nearly co-synchronous (although there is a north–south gradient), a rapid spread of these lifeways is suggested. Early Neolithic settlements are found in the open air along the coast and river valleys as well as in caves, which were also used for burials, animal pens, and ritual purposes. These earliest open-air sites include Les Guixeres de Vilobí²⁰ and Mas d'Is.²¹ One of the earliest dated caves is Cova d'en Pardo (6610 ± 40 BP/Beta 231879).²² Manuel de Góngora y Martínez (1822–1884)²³ and later Bosch-Gimpera²⁴ gave the name *Cultura de las Cuevas* for those Early (and Middle) Neolithic cave and rock-shelter sites with decorated ceramics in the uplands of Andalucia, including Nerja,²⁵ Murciélagos,²⁶ and Carigüela.²⁷ However, the term is no longer used because of its normative associations.²⁸ These early agro-pastoral groups were roughly contemporary with the sparsely settled

hunter-gatherers that produced the Cocina-type triangle points, such as those found at Botiquera dels Moros, Mas Cremat, and Cueva de la Cocina.²⁹ However, most of Mediterranean Iberia's coastal landscape – including Catalonia, northern Alicante, and parts of Andalucía – could be seen as a population “vacuum.”³⁰ Thus, the first farming peoples to arrive in Iberia would have encountered relatively few people and little resistance to their initial settlement. The endurance of some Mesolithic-type communities suggests that acculturation and more intensive interactions also occurred. Paleoenvironmental studies provide evidence for the impact and transformation of vegetation, including forest clearance, by early farming people.³¹

The large cave of Cocina has been central to understanding the process of neolithization in Mediterranean Iberia, given its occupation from the Upper Paleolithic, Epipaleolithic, and the Neolithic. Cocina was discovered in 1940 and excavated by Pericot from 1941 to 1945³² and later by Fortea in the 1970s.³³ An international and interdisciplinary team engaged in new investigations of the site, which included reanalyses of previously excavated material and new radiocarbon dating.³⁴ Among the results, their work has challenged the North African origin for the blade and trapeze complex, given the dating of these lithics to the early seventh millennium cal BCE. Analyses of the reconstructed stratigraphy also show a continuous occupation through the Late Mesolithic, spanning the period associated with the 8.2 kya event, thus, posing some doubts on the role of this event on cultural change. Analyses show, however, a break before the Early Neolithic, as do other sites, such as Abric de la Falguera.³⁵

Much early research was devoted to the study of ceramics, particularly Cardial ware, and tended to presume a unity to these ceramics.³⁶ Some, like Bosch-Gimpera³⁷ saw connections between the North African Neolithic ceramics (part of the so-called Capsian tradition) and those of Mediterranean Spain and, based on this, he suggested a North African contribution to the development of the Neolithic in Iberia.³⁸ However, archaeologists now recognize the decorative and iconographic richness, technical variation, and diachronic changes involved in the production of Early Neolithic ceramics and have sought to better understand the factors in their heterogeneity.³⁹ Early Neolithic ceramics were made in the form of jugs and open bowls, often with handles, sometimes bi-lobed, and, when decorated, they were adorned by incisions, points, cord-impressions, appliqué, and paint (Figure 4.2). The motifs are varied and include geometric designs, anthropomorphs, textile-like images, and animals. It is also now believed that Impressed ware, with parallels found on the Ligurian coast of Italy, and not Cardial ware, was the first pottery in Mediterranean Iberia. Its distribution is not widespread and its earliest dates place its appearance at 5,600 cal BCE, which is contemporary with the earliest animal and plant domesticates on the peninsula. Thus, Impressed ware was associated with the first period of colonization of farming peoples from Italy.⁴⁰

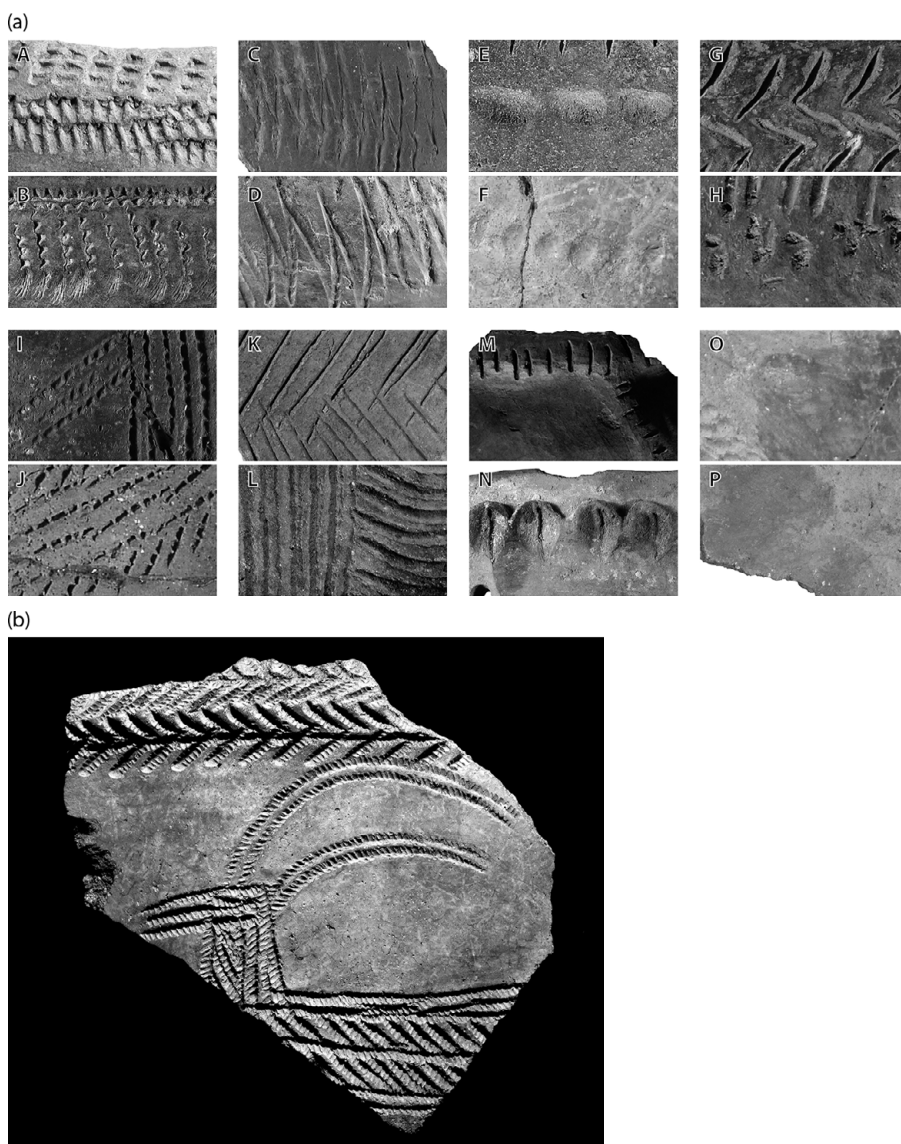


Figure 4.2 (a) Early Neolithic ceramics of Mediterranean Iberia. (b) Cova de l'Or sherd.

Photos: (a) Bernabeu Aubán *et al.* 2011b, fig. 7.2; courtesy: J. Bernabeu. (b) Courtesy: Museu de Prehistòria de València

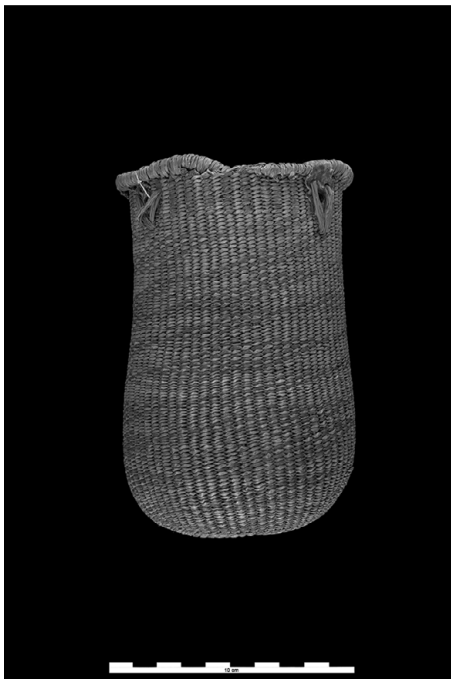
Other technological novelties that appear in the Early Neolithic (and continue into the Middle Neolithic, and later) include polished stone tools, sickle blades, bone tools (spatulas, needles, awls, etc.), and a range of personal adornments, such as beads and bracelets of stone and shell.⁴¹ At the cave of Murciélagos, first published by Góngora,⁴² basketry, textiles, sandals, and a

wooden spoon associated with the remains of sixty mummified people (one, a woman wearing a leather tunic) were preserved owing to the site's arid conditions (Figure 4.3).⁴³ Some of the baskets were decorated with colored geometric designs; two contained soil, and in the rest there were strands of hair, shells, and poppy seeds. These objects date to the late sixth and fifth millennia cal BCE.⁴⁴

The manufacture and use of marble, limestone, and slate bracelets also marked the earliest agrarian communities in Andalusia and Valencia (5,500–4,800 cal BCE).⁴⁵ Numerous workshops associated with open-air settlements and one quarry are known. Used during life, as wear on their interior shows, bracelets often accompanied people to their graves, and hundreds are found in burial sites. Cortijo Cevico is a quarry where dolomitic marble was extracted and fashioned into preforms during the Early Neolithic.⁴⁶ No workshops where bracelets were completed are known close to the quarry site. One of these workshops was Cabecicos Negros. There, personal adornment, including slate and limestone bracelets, were manufactured.⁴⁷ Dates on shell, corrected for their marine effect, place the site in the second half of the sixth millennium cal BCE. Nearly the entire *chaîne opératoire* for the production of the bracelets, as well as tools related to their manufacture, such as flaked borers, were recovered at the site, which is located only a few kilometers from slate outcrops and the Mediterranean. More than 1,000 pieces of finished and unfinished bracelets were found. While it is tempting to interpret Cabecicos Negros as a specialized production site, Martínez-Sevilla notes that, in replication experiments, significant debris was produced in making a bracelet, and, thus, one must exercise caution in relating debris to the intensity of production.⁴⁸ The manufacture of stone bracelets may have complemented other subsistence practices, such as the acquisition of marine or riverine resources.

Insights into the rich variety of organic-based technologies of Early Neolithic peoples were revealed at La Draga, which was discovered in 1990 during construction for the 1992 Olympics in Barcelona. La Draga represents a new kind of Early Neolithic settlement type for the Iberian Peninsula – the lakeside village. La Draga is located on the eastern shore of Lake Banyoles and dated to the mid-sixth millennium BCE.⁴⁹ Like its counterparts in Alpine Europe, La Draga has remarkably preserved organic remains, which provide a stunning picture of the diverse resources used by early farming communities for building and subsistence as well as a window into domestic life never before seen in Iberia. For example, excavators recovered rectangular houses built from wood posts, wood objects, including a yew bow and boxwood sickles, a horn ring, cordage, and basketry (Figure 4.4). The integration of botanical and faunal studies also provided rare insights into the nature of early farming practices.⁵⁰ The site and reconstructions are now part of the Parc Neolític de La Draga.

(a)



(b)

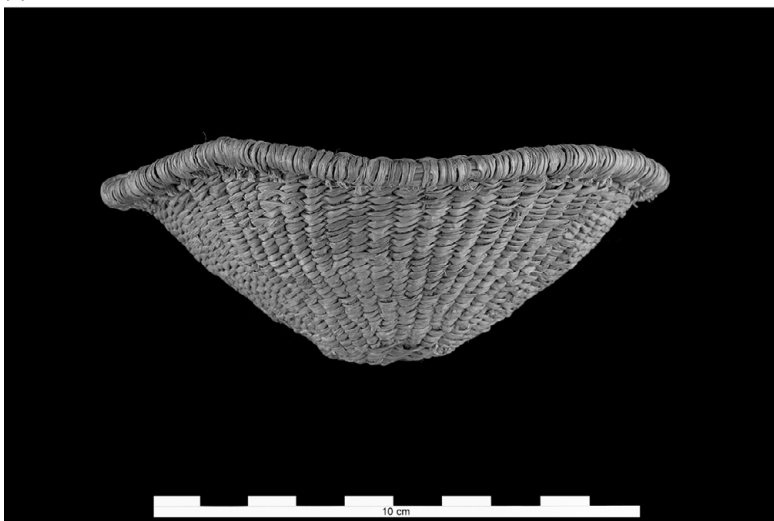
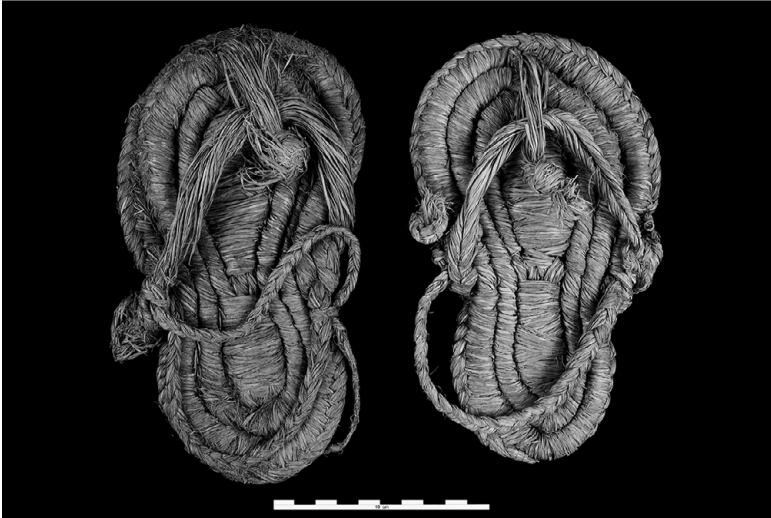


Figure 4.3 Baskets from Cueva de los Murciélagos, Albuñol. (a) MAN-579-ID002: Museo Arqueológico Nacional; (b) MAN-592-ID002: Museo Arqueológico Nacional. (c) Sandals from Cueva de los Murciélagos, Albuñol, MANCO000001419-ID001: Museo Arqueológico Nacional.

Photos: (a, b) Verónica Schulmeister Guillén. (c) Susana Vicente Galende

(c)

**Figure 4.3** (*cont.*)

(a)



(b)

**Figure 4.4** (a) Spoon/ladle and (b) comb from La Draga/ Museu Arqueològic de Banyoles (NRG 893/6).

Photos: Salvador Comalat

During the Middle Neolithic, continuities and changes are evident in Mediterranean Iberia. Groups continued to practice agro-pastoralism; in the northeast, naked barley and naked wheat were harvested.⁵¹ Habitation sites are not abundant, and the few that are known (silos, hearths, combustion structures,

etc.) are in lowland and valley settings.⁵² In the northeast, ceramics were generally carinated, and, when decorated, they had geometric-linear motifs similar to those of the Chasséen tradition of southern France. One important change was the emergence of new burial architectures and practices.⁵³ Relatively rare in the Mesolithic and Early Neolithic, mortuary sites become more frequent in the Middle Neolithic. The dead were placed in pits (the so-called Pit Grave Culture [*Sepulcros de fossa*]), cists, and dolmens, although caves continued to be used. Burials tend to be individualized (although some double burials are known), which allow archaeologists to assess the relationship between individuals and grave goods. One of the most important of these cemeteries is La Bòbila Madurell–Can Gambús, where around 175 graves were found and dated to 4,000–3,600 cal BCE.⁵⁴ Domestic contexts have also been identified at the site. Two sectors, less than 1 km apart and generally contemporary, were identified: Can Gambús and La Bòbila Madurell. Can Gambús is located on higher ground than Bòbila Madurell, and only adults were buried there, in contrast to Bòbila Madurell; grave goods also tend to be richer. The cemetery as a whole is distinctive for the abundance of goods made from exotic stones, such as axes and adzes made of honey flint (from southeast France), and jadeite, amphibolite, eclogite, and nephrite (from the Alps and Pyrenees) (Figure 4.5). In burials and domestic structures from both sectors, a total of seven obsidian tools from the Monte Arci source in Sardinia were found.⁵⁵ To date, a total of only eleven obsidian tools are known from northeast Spain, so the population buried at La Bòbila Madurell–Can Gambús seems to have had a particularly strong connection to this trade network. An isotopic study was conducted to discern whether the demographic and artifactual differences between the two sectors translated into differences in diet. Results showed that the populations buried in both sectors ate primarily terrestrial resources (animals), although significant intrapopulation differences were discerned in the Can Gambús sector, unlike the Bòbila Madurell sector. This pattern suggests some differentiation in diet according to age and sex. Gibaja and Terradas carried out use-wear analyses of the honey flint tools from Can Gambús-1 and determined that, while some tools had been used prior to burial, others were manufactured specifically for the dead, as they show no signs of use.⁵⁶ La Bòbila Madurell–Can Gambús was not the only burial site in northeast Spain where exotic polished stones were found, however. Some of the dead at Bòbila d'en Joca were also buried with jadeite and nephrite axes.⁵⁷ These rare stones attest to connections between some northeast Iberian groups and others beyond the Pyrenees and along the Mediterranean coast, which may have involved the trafficking of variscite in exchange. Bayesian modeling of the La Bòbila Madurell–Can Gambús population indicate that these exchange networks apparently stopped at around the same time that the cemetery was abandoned – ca. 3,600 cal BCE. In the collective burials of the Late Neolithic, these exotic raw materials are largely absent,⁵⁸ and the variscite mines also stopped being quarried.

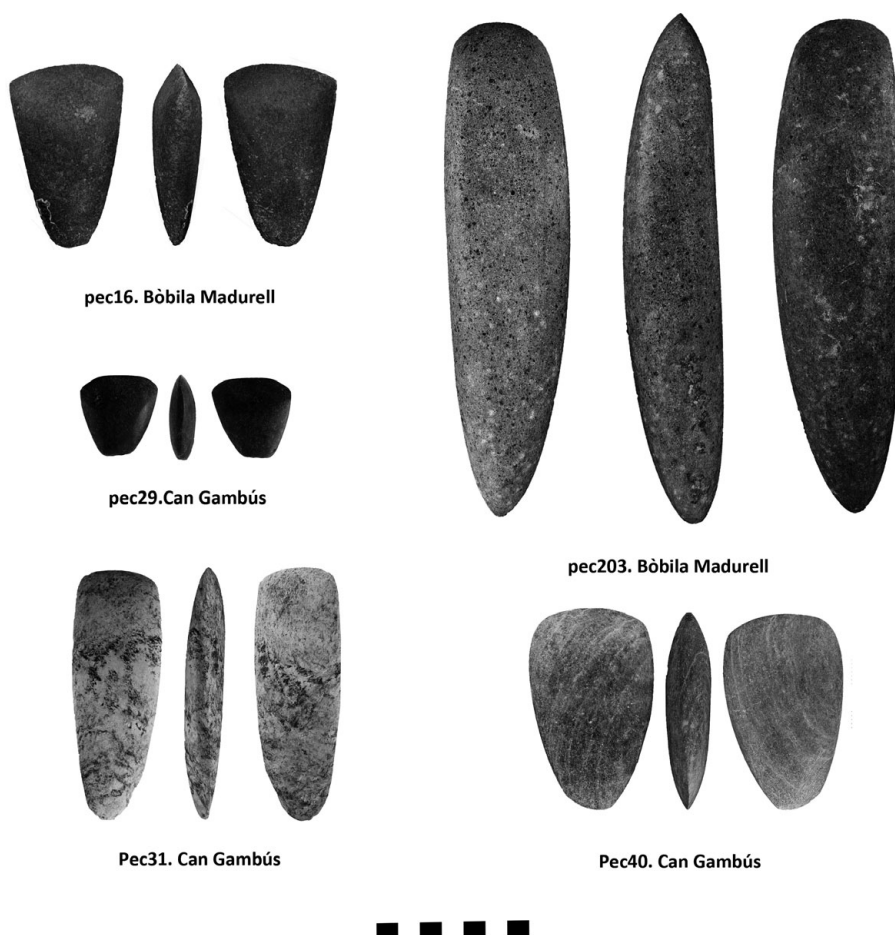


Figure 4.5 Axes from La Bòbila Madurell-Can Gambús.

From: Gibaja Bao *et al.* 2017; photo: Alba Masclans

The variscite mines and associated burials at Gavà, located a 30-minute drive from downtown Barcelona, have generated a unique window into Middle Neolithic (4,000–3,500 BCE) lifeways. Variscite was mined for the production of beads, which was apparently carried out on-site (Plate 3). Variscite mining also had a potent symbolic component, as suggested by the discovery in one of the shafts of a highly unusual anthropomorphic ceramic vessel, known as the Gavà Venus (Figure 4.6).⁵⁹ Variscite mines have also been identified in south-west Spain, at Pico Centeno, which was in use between the early sixth and late third millennium BCE.⁶⁰

The extraction and processing of salt from the Cardona salt mountain also played a significant role in the economic and social lives of agro-pastoral groups during the Middle Neolithic in the northeast (Figure 4.7).⁶¹ In the valley at the base of the mountain, polished stone tools with clear traces of percussion, some with salt crystals embedded in the fabric, provide clear



Figure 4.6 Gavà Venus.

Photo: Josep Casanova, Museu de Gavà

evidence of this extractive industry. Approximately 30 km from the mountain is Ca l'Oliaire,⁶² which has been interpreted as a seasonal camp for pastoral groups who traded salt for other luxury items, such as variscite. There six pits were found, one of which housed the burial of a female with eighteen shell bracelets and more than 230 stone (steatite, variscite) and shell beads. In one of the other pits was a ceramic vessel with salt residue; two other ceramics had residues associated with dairy products.

At the cave of Can Sadurní, in levels dated to the Middle Neolithic (4,400–4,200 cal BCE), the earliest evidence for beer in Europe was discovered. Calcium oxalates (originating from the fermentation of the malt in water) was found through residue analysis of Middle Neolithic ceramics, while starch grains with signs of malting were found in a grinding stone and a handstone. These findings were associated with burials from the cave interior.⁶³ Beer residue was also found in ceramics at the site dated to the Bronze Age. Archaeological deposits were recovered from over 4 m of sediment from the cave interior as well as from the outer terrace; as a whole, they span the Epipaleolithic through Roman occupation.⁶⁴ There are up to five funerary episodes documented. The oldest dates to the Early Neolithic Cardial phase (Layer 18) (5,400–5,200 cal BCE). The rich assemblage of cereal grains found in the ceramics associated with the dead, totaling over 60,000 remains, have been interpreted as traces of a funerary ritual, given the labor associated with the offering.⁶⁵ From the context and hyper-flexed position of the Middle Neolithic remains, it appears that the

(a)



(b)



Figure 4.7 (a) Cardona salt mountain; (b) extracting mining tools; fractures and signs of wear can be seen in the reused axes

Photos: (a) M. Díaz-Andreu García 2013. (b) Alfons Figuls

bodies of the dead were wrapped tightly and placed on the cave surface. Prior to its use as a funerary space during the Middle Neolithic, the cave interior served as a byre for animal domesticates (4,700–4,450 cal BCE).⁶⁶

The Interior

Evidence for human occupation of the interior during the Early Holocene is sparse. As in the case of Mediterranean Iberia, this relative absence of

occupation has been seen as important in explaining the rapid spread of agrarian lifeways. That there are sites known from the Upper Paleolithic, but few dating to the Dryas III-Preboreal warming period, ca. 9,500 BC, has given rise to the model that the expansion of forests, absence of lakes, and drying of rivers made the interior a less attractive environment than the coast.⁶⁷ However, as for the Mediterranean, it is not clear whether this absence of evidence signifies evidence of absence.⁶⁸ Little research has been explicitly devoted to investigating Mesolithic sites in interior Iberia, which makes up roughly half of the area of the entire peninsula. One could argue that the sites discovered, as a result of targeted research, on the southern slopes of the Cantabrian Mountains and Pyrenees and in the Ebro Valley, point to the possibility of additional sites. The few that are known include El Níspero, a cave site where Mesolithic lithics (backed bladelets and denticulates) and fauna of primarily rabbit, red deer, and horse were recovered (although there are no radiocarbon dates).⁶⁹ In Teruel and Zaragoza, the rock-shelter sites of Costalena and El Pontet have geometric microliths suggestive of Late Mesolithic dates. In the Meseta, closer to the actual geographic interior of Iberia, sites are indeed rare. They include La Higuera⁷⁰ and El Conejar, which has a level associated with choppers and bipolar quartzite cores dated to 7,350–7,080 cal BCE.⁷¹

It is not until the Early Neolithic, ca. 5,500 cal BCE, that human occupation in the Iberian interior becomes archaeologically more visible.⁷² Early Neolithic sites tend to be found in lowland zones, and burials and occupational levels are found in close association. The settlements of La Revilla del Campo and La Lámpara provide key chronological information on these early agricultural communities, given the dozens of radiocarbon dates obtained from charcoal or short-life samples.⁷³ For La Revilla, the short-life dates cluster between 5,300 and 5,000 cal BCE; at La Lámpara, they cluster between 5,500 and 4,500 cal BCE. Dated to the early fifth millennium cal BCE and characterized by negative structures are sites such as El Prado.⁷⁴ At El Prado, some negative structures appear to have been first used for storage and then reused for the deposit of waste, although some argue that these deposits may have been part of feasting or other rituals. Some were used as burials.

One of the most exciting contributions to understanding the Early Neolithic of interior Iberia are the flint mines of Casa Montero, the first Early Neolithic flint mines to be found in Iberia. Located on a river bluff, Casa Montero was discovered in 2003 as a consequence of the mitigation process for the M-50 motorway around Madrid.⁷⁵ Dated to 5,400–5,000 cal BCE, the mines extended over 2 ha and revealed over 3,700 vertical shafts, some as deep as 7 m (Figure 4.8). Their excavation produced a vast collection of flint tools in



Figure 4.8 Casa Montero flint mines.

From: www.casamontero.org; courtesy: Pedro Díaz-del-Río

all stages of preparation, although the primary end products were blades. Interestingly, no contemporary settlements have yet been identified, which suggests that groups carried out their mining over repeated and short-term expeditions.

Another illustration of the impact of surveys in the interior in revealing previously unknown site types is the discovery of megalithic tombs. Through systematic survey, megaliths are now known to be abundant in the Meseta, with the earliest tombs, such as the dolmen of Azután and the tumulus of El Castillejo, dating to the second half of the fifth millennium BCE. They display a striking polymorphism. Their locations correspond closely with that of Early Neolithic settlements, demonstrating the link between the earliest farming peoples of central Iberia and megalith-building.⁷⁶ Later tombs include the tumuli of La Mina (3,800–3,700 cal BCE) and Alto de Reinoso (3,700–3,600 cal BCE).⁷⁷

Also known are the deliberately burnt charnel houses or “lime-kiln” tombs (*tumbas calero*) of the northern Meseta, which were first discovered in the 1990s. They provide another example of how relatively little is known of the archaeology of the Meseta. *Tumbas calero* have been identified in the Ambrona Valley, such as La Peña de la Abuela/La Lámpara and La Sima Barrow,⁷⁸ dated to between 3,800 and 3,600 cal BCE. Similar burial structures, comparable in date, are known in Valladolid, such as El Miradero.⁷⁹ Like many *tumbas calero*, La Peña is located on an elevation overlooking La Mentiroso Valley. It began its biography as a corbelled tomb for a collective burial, in which the dead

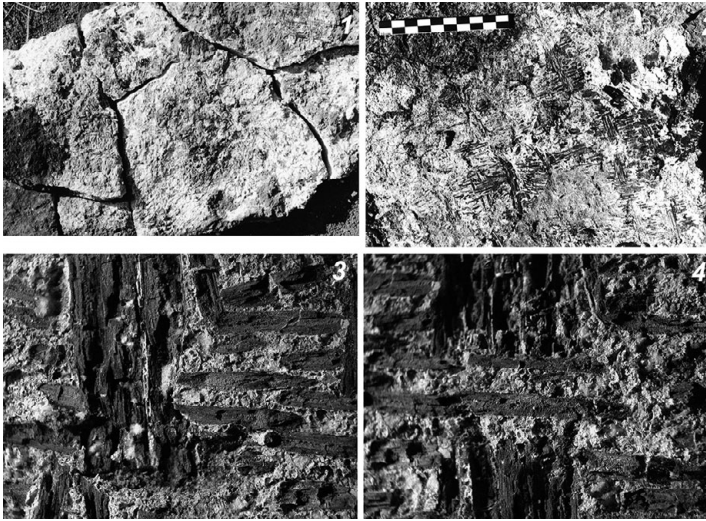


Figure 4.9 La Peña de la Abuela. Imprint of burial made of willow branches.

From: Rojo-Guerra 2010, fig. 5

were deposited as primary interments. The tomb, made from limestone blocks, was then burned to such a high temperature that the structure essentially melted the stones, which formed a quicklime crust that sealed the tomb. Given the preservation of necrophagic fauna, such as beetles and larvae, it appears that the bodies were relatively fresh or not fully decomposed before the tomb was burned. A stone mound was then placed over the tomb, and this was capped by a stela-menhir. Botanical studies of the La Peña deposits, including the quicklime, revealed the well-preserved remains of vegetal offerings, including pine branches, as well as impressions of burial shrouds made from willow branches (Figure 4.9).⁸⁰ Other burial offerings included geometric microliths, polished stone axes, bone spatula-idols, and dentalium bead necklaces. At El Miradero, little pottery was found other than small ritual vessels. After its closing, La Peña de la Abuela was used as a burial place during the Beaker period, 1,500 years later. This suggests that memory of the place as a home for the dead persisted over a long period of time. Experimental studies were carried out to better understand labor expenditure involved in constructing and burning a *tumba calero*, which showed, among other things, that it was impossible to produce such high temperatures from an accidental fire.

Ceramics associated with Early and Middle Neolithic sites are highly variable, as in the Mediterranean. They include pottery decorated by cord-impressions, incisions, *almagra* (red-colored slip), as well as undecorated ware. Their forms are globular and semi-spherical. Analyses of the temper of Early and Middle Neolithic ceramics from the Madrid area show the use of bone temper, the first time that this has been documented in the Iberian Peninsula.⁸¹

The Vasco-Cantabrian Coast

The principal technocomplex of the Late Pleistocene in the Vasco-Cantabrian zone is the Azilian.⁸² The Azilian was named after Mas d'Azil, the cave site in southwest France where it was first described by French prehistorian Édouard Piette (1827–1906) in the late nineteenth century.⁸³ Based on his work at Mas d'Azil, Piette was the first to be able to link the hiatus that had existed between the Paleolithic and Neolithic in France. The Azilian spans the Younger Dryas and Early Holocene (Preboreal) (11,750–8,650 BP). Its expression, therefore, cannot be explained in purely environmental terms.⁸⁴ Azilian sites extend across Cantabrian Spain, the Basque country, and the French Pyrenees. Overall, more continuity over time is suggested in Cantabrian Spain than in southwest France, perhaps related to more abrupt climate changes in France. Azilian material culture is distinguished by its antler harpoons with flat cross-sections and little elaboration (in contrast to Magdalenian harpoons), microliths (including micropoints, backed bladelets, thumbnail endscrapers), painted and engraved pebbles, and bones with engraved parallel lines. As the microliths share affinities with Magdalenian backed blades, the Azilian is considered “Epipaleolithic.” The engraved bones with check marks also demonstrate continuity with Magdalenian practices.⁸⁵ The spectacular cave paintings that distinguished the Vasco-Cantabrian region in the Magdalenian, however, came to an apparent end in the Azilian. The reasons for this are not clear. Many Azilian cave sites have Magdalenian parietal art, and, thus, it is possible that some imagery on the caves were produced during the Azilian but has not been identified as such.⁸⁶ Key sites with Azilian deposits include the caves of Ekain,⁸⁷ El Mirón,⁸⁸ El Pendo,⁸⁹ Los Azules I,⁹⁰ La Riera,⁹¹ and Cueva Oscura de Ania.⁹² In contrast to Magdalenian sites (and levels within sites), Azilian sites (and levels) appear to be small and without deep stratigraphy, suggestive of smaller social groups and networks.⁹³

Although many scholars highlight the harpoons⁹⁴ and decorated pebbles⁹⁵ of the Azilian, these objects are actually quite rare in the vast majority of sites, particularly in the Iberian Peninsula.⁹⁶ For example, when harpoons are found at sites, there are only one or two. The exceptions are Los Azules, which has about twenty-nine,⁹⁷ and El Pendo, with at least eighteen.⁹⁸ To put these numbers in some context, Mas d'Azil produced over 1,427 painted pebbles,⁹⁹ along with over 1,000 barbed points. As is often the case in archaeology, the “diagnostic” artifacts or features can often be quite rare. Thus, it is somewhat problematic to expect that a unified Azilian phenomenon existed across northern Spain and southwest France, at least as defined by what was found at Mas d'Azil. Interestingly, for his discovery of such an exceptional number of painted pebbles from an ancient period, Piette experienced a similar suspicion as Sanz de Sautuola did for his discovery at Altamira. While those at Mas d'Azil were almost certainly authentic, Azilian pebbles were later faked in large

numbers in the early 1900s, although techniques have been developed to detect these. What did these painted (and engraved) pebbles mean? It is possible that their dots and strokes represent an early notational system,¹⁰⁰ although not all scholars are convinced.¹⁰¹

The primary quarry of Azilian hunters in Iberia were red deer and ibex, while in southwest France it was reindeer. In addition to these differences in animals hunted, Straus noted that subsistence strategies were also different.¹⁰² Specifically, there was more specialization in southwest France (with a focus on reindeer) and more diversification in Cantabrian Spain. Shellfish were also an important staple for these communities. The site of La Riera has provided the best information on this practice.¹⁰³ *Patella vulgata* dominated the assemblage, although it declined in frequency over time, while *Patella intermedia* increased. Analysis of marine gastropods, which included *Patella*, from La Riera and other Upper Paleolithic through Early Neolithic sites in northern Iberia also provided evidence for a decline in their mean size.¹⁰⁴ Gutiérrez-Zugasti has argued that, while a decrease in their size in the Upper Paleolithic may be the result of climatic shifts, continued changes from the Mesolithic through the Early Neolithic are most likely due to overexploitation.

The only Azilian burial known to date is at Los Azules cave.¹⁰⁵ In addition to evidence for a living site, an adult male (fifty years old) was found buried in an oval pit, colored in red, near the entrance of the cave, with flat stones placed over his tibia. He was provided with painted cobbles, flint endscrapers and burins, harpoons, and the skull of a badger, among other items. This site has one of the earliest well-documented uses of ochre in Iberia. Dating of levels above and below the burial places the death of this individual at ca. 9,000–8,500 cal BCE.

Following the Azilian were important changes in settlement pattern, subsistence, and other cultural practices. These are considered to be Mesolithic – with the most well-known expression being the Asturian, dated 8,000–5,000 cal BCE.¹⁰⁶ The Asturian was first identified by D. Ricardo Duque de Estrada y Martínez de Morentín, Eighth Count of Vega del Sella (1870–1941). An aristocrat, Vega del Sella devoted his life to the archaeology of Asturias. Vega del Sella first recovered Asturian tools at the cave site of El Pinicial, although initially he believed they were lower Middle Paleolithic in date because they were “coarse” tools made on quartzite cobbles.¹⁰⁷ It was Obermaier, a friend of Vega del Sella and frequent collaborator, who gave the name “Asturian” to sites with these tools and helped frame the Asturian within the context of other European Mesolithic cultures.¹⁰⁸ Vega del Sella’s stratigraphic excavations at shell midden sites, such as Cueto de la Mina and La Riera, the latter, in stratigraphic position above the Azilian level,¹⁰⁹ ultimately convinced him and Obermaier that they were post-Paleolithic in date. “Classic” Asturian sites are characterized by shell middens found in the porches of caves and rock-shelters along the present Asturian coast. During the Asturian, however, the sea level

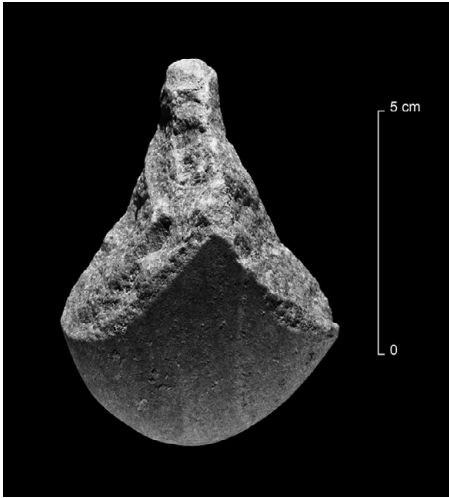


Figure 4.10 Asturian pick axe from El Alloru.

Photo: L. Teira; from Fano Martínez 2018, fig. 7

was 20–30 m below that of the present, and the coast was significantly wider. Thus, if there were coastal sites during the Asturian (as well as earlier Magdalenian and Azilian sites), they are now submerged, and what is now coastal was actually inland at that time.¹¹⁰ El Alloru is the first open-air site dated to the Asturian.¹¹¹ Settlement patterns of Late Pleistocene and Early Holocene sites must be framed in terms of the dynamics of coastal geography, as they are heavily biased against coastal locations. It is likely that a far more varied and complex picture of lifeways during this time will emerge as more open-air settlements are discovered and investigated.

The classic Asturian artifact is the macrolithic stone pick (Figure 4.10).¹¹² Asturian picks are relatively standardized cobble tools made by direct percussion to create a point at one end. Vega del Sella believed they were used to gather limpets, and other possibilities were subsequently proposed (such as to open sea urchins). Experimental studies determined that they were most likely used to collect limpets. Asturian picks are an exception to the “rule” that the European Mesolithic is always associated with microlithic industries. The Mirian axe and other macrolithic industries found in southern Portugal are other examples (see later). In addition to picks, however, microliths were also produced, such as backed bladelets, points, and geometric microliths.¹¹³ No art objects are known, although personal ornaments made of shell and red deer canines were recovered at El Toral III and El Mazo.¹¹⁴

The significance of the Asturian and its relationship to the Azilian have long been debated. Questions have centered around whether it represents primarily a chronological period, or a distinctive cultural or adaptive behavior. Similar stone picks are known in the Basque region, Galicia, and northern Portugal, so

they are not isolated to this region. Furthermore, not all shell middens have picks, and not all picks are found in shell middens. For example, picks were found at Bañugues, which is not a shell midden.¹¹⁵ Shell middens without these picks are known in the Tagus/Sado/Muge estuary (see later). Indeed, there are very few sites known where Asturian picks and shell middens overlie Azilian assemblages (the one exception being La Riera). Current thinking points to the Asturian representing a post-Azilian cultural phase, although it is possible that Asturian groups engaged in different subsistence practices from Azilian peoples. However, little is known of their use of wild plants.¹¹⁶

What is clear is that the shells found in these middens, such as *Phorcus lineatus* (topshell) and *P. intermedia* (limpet), reflect a more temperate climate. The middens also provide testimony of the hunting of large fauna. Red deer generally predominate, along with aurochs, horse, wild boar, roe deer, chamois, and ibex, although ibex are more common to the south of the classic Asturian sites. Land snails played a supplemental role.¹¹⁷

The few known Asturian burials provide some insights into mortuary practices. Generally, sites were used as occupations and burials at different times.¹¹⁸ Individual inhumations in pits, with some grave goods, appear typical. At the rock-shelter of Molino de Gasparín, an older female was found buried in a shell midden with three picks by her head. Given that one of these picks was sharp, and, when normally found, they are worn, it is believed that this pick, if not the others, were provided as funerary offerings.¹¹⁹

While Asturian sites are typically found along the coast, inland sites in the mountains are also known. One of these is the cave of Los Canes. Here, five individuals, including a child, were found in three distinct burial pits and dated to between 6,000 and 5,000 cal BCE. They were laid to rest in different positions and provided with grave goods that included a red deer antler with a perforation (like the Paleolithic batons), perforated deer canines, snail shells, and a pecked cobble.¹²⁰ One of the females had a number of oral pathologies (caries, abscesses, and alveolar resorption), indicating she ate foods rich in carbohydrates.

To the east of the Asturian territory, in the Basque area, sites with different assemblages are found, most notably, with geometric microliths. These sites are termed post-Azilian Epipaleolithic or Mesolithic.¹²¹ One of these is the rock-shelter of Jaizkibel 3 (aka J3). There, an adult male was found within a shell midden (primarily made up of *P. intermedia*/limpets) and dated to 7,530–7,180 cal BCE.¹²² Given the position of the skeletal remains, with folded arms found beneath the legs, it is believed he was tied or wrapped before burial.

The relative contributions of shellfish and terrestrial resources among Mesolithic human groups along the Vasco-Cantabrian zone are not clear, but they appear to be related to the site's location. Stable isotope ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) studies of the human remains at the inland site of Los Canes indicate a

terrestrial diet, while analyses of individuals from three coastal sites (Poza l'Egua, Colomba, and J3) indicate a mixed terrestrial-marine protein diet.¹²³



The process by which farming was incorporated into the lifeways of people in the Vasco-Cantabrian zone has been the focus of numerous investigations and syntheses in recent years.¹²⁴ These studies have approached the question from diverse and often multidisciplinary perspectives – including individual site stratigraphies, pollen sequences, and Bayesian modeling. It was long thought that Vasco-Cantabria was a marginal region for the uptake of agriculture given its biogeographic setting, its distance from the “core” regions of agriculture (i.e., the Mediterranean), or because of resistance by local hunter-gatherer populations. However, recent research is beginning to question these assumptions. More nuanced histories are also being revealed, with variability noted between the sequences of sites to the north and to the south of the Cordillera as a result of ecological differences.

Before radiocarbon dating, the Neolithic was considered to have begun with the appearance of the first ceramics or first megaliths. Archaeologists now recognize that domestic plants, animals, ceramics, and megaliths were not necessarily incorporated into people’s lifeways as a “package” and, thus, documenting and assessing the factors leading to early farming is challenging. In the Vasco-Cantabrian region, ceramics can appear before animal or plant domesticates or at the same time. Most of the earliest ceramics found are undecorated. When decorated, they are impressed (such as Cardial ware), incised, or plastic.¹²⁵ Some are decorated by the stab and drag technique and known as Boquique ware. This ware is also found at Early Neolithic sites of the Atlantic façade, such as Valada do Mato, and in the interior.¹²⁶

In some areas, it has been suggested that there was no sudden change and that hunter-gathering persisted for some centuries while farming was practiced at other sites. For example, occupants of the open-air site of Herriko Barra specialized in red deer hunting. No domestic cereals or ceramics were found, but lithics characteristic of the Early Neolithic were.¹²⁷ Cereal pollen was also recovered, which was dated to 5,000–4,600 cal BCE, so it is likely that domestication in the area (or at the site) was carried out.¹²⁸ In contrast, at Pico Ramos, a contemporary shell midden dated to 4,910–4,540 cal BCE, no domesticates or ceramics were recovered.¹²⁹

At other sites, the full Neolithic “package” appears to have been incorporated together, suggesting a rapid uptake. At the small rock-shelter of Peña Larga, Cardial ceramics, as well as other decorated and undecorated pottery, were found with domestic sheep with flint sickle blades with silica gloss in levels dating to 5,710–5,610 cal BC.¹³⁰ At Los Husos I, with its oldest date of 5,320–5,030 cal BCE, evidence for sheepfolding (through micromorphological

studies of sediments) and ceramics were found. At El Mirón, emmer wheat, domestic ovicaprids, cattle, pig, as well as ceramics appear together in a level dated to the mid-fifth millennium BC, although hunting, particularly of red deer, continued.¹³¹ Dating of cereal pollen obtained at the Monte Aro mire of 4,700 cal BCE¹³² also supports the model for rapid adoption of farming, with an east to west gradient,¹³³ with pastoral activities taking place prior to then, ca. 5,300 cal BCE. The most likely explanation for these different practices is that the Vasco-Cantabrian region was a mosaic in which hunter-gatherers continued practicing their lifeways until the early fifth millennium cal BCE alongside groups that had taken up farming. Bayesian analyses of Mesolithic and Neolithic sites in the region show an overlap of their radiocarbon dates, which supports this characterization.¹³⁴

One of the diagnostic lithics of the Early Neolithic (which also appear in the Mesolithic¹³⁵) are microliths with a bifacial retouch sometimes called “Helwan.” These are named after the Neolithic site in Egypt where this technique was first described, although tools with this retouch are actually far more abundant in the Natufian of the Levant than in Egypt.¹³⁶

During the Early Neolithic, the dead were primarily inhumed individually in pits within caves or open-air settlements, although there are few sites known.¹³⁷ The large (14 ha) open-air settlement of Los Cascajos was associated with houses, hearths, and storage areas, as well as burials.¹³⁸ Beginning in the last third of the fifth millennium cal BCE, megaliths began to be constructed for the dead. There was a spike in megalithic burials ca. 4,100–3,900 cal BCE, followed by a decrease in the fourth millennium cal BCE,¹³⁹ although some megaliths continued to be used into the Early Bronze Age.¹⁴⁰ The concentration of dates in this time period suggests that their building did not involve a gradual process, but was a rapid and short episode. There are also dates for older “non-megalithic” stone structures in Asturias, which had a more traditional megalith built over them.¹⁴¹ The study of megaliths in this region has been uneven, however, and there may well be changes to this model in the future. In Asturias and the Basque region, megaliths were investigated as early as the nineteenth century, while, in Cantabria, Paleolithic cave sites have traditionally dominated research. Consequently, far more megaliths are known for Asturias and the Basque region than Cantabria.¹⁴² Megaliths in Vasco-Cantabria are distinctive from those in other parts of Iberia, even from neighboring regions, such as the Ebro and Galicia, in that none have passages. Their forms are variable, but, generally, they are defined by a series of orthostats and have floors that are little over 2 m² in area.¹⁴³

Some dead were housed in caves and rock-shelters. At Marizulo cave, an adult was found buried with a dog and lamb in a little chamber enclosed by three stone blocks.¹⁴⁴

DNA studies have provided insights into history of the region, and the Basque area, in particular. This has been of particular interest given that the

Basque language is not Indo-European and present-day Basques are associated with a number of genetic distinctions (such as the Rh-negative allele, the J group haplotype). It used to be thought that the Basques are descendants of a pre-Neolithic population.¹⁴⁵ However, the DNA of eight individuals from El Portalón in the Atapuerca range, dated to 3,500–1,500 cal BCE, show the greatest affinity to Basques, suggesting that Basques are closely related to the first Iberian farming peoples, who remained relatively isolated in the region.¹⁴⁶

The Western Façade

The cultural sequence along the Atlantic façade – specifically, Galicia and Portugal – between the Late Pleistocene and Early Holocene shares many commonalities with the Vasco-Cantabrian zone (see later), due in part to its Atlantic climate. There are also, however, some interesting distinctions.

During the Late Pleistocene, settlements along the western façade were located inland, sometimes at high elevations, as well as along the coast. With the warming that accompanied the Early Holocene and subsequent expansion of interior forests, populations shifted toward the coast and estuaries.¹⁴⁷ Intensification and diversification of subsistence practices accompanied these changes, although these processes may have actually begun prior to the Pleistocene/Holocene transition.¹⁴⁸ Some scholars denote the Early Holocene as Mesolithic (Early and Late),¹⁴⁹ seeing significant changes in subsistence practices, technology, and site types between the Late Pleistocene and the Early Holocene. Others emphasize continuity in social organization (i.e., egalitarianism) between the Late Pleistocene and Early Holocene and divide this time into an Epipaleolithic and, later, a Mesolithic, when social inequalities and complex hunter-gatherers emerged.¹⁵⁰

In Galicia (concentrated in the province of Lugo), a series of Azilian/Epipaleolithic sites are known that have been dated by radiocarbon and lithics. They are in rock-shelters and the open air, and include Peña de Xiboi, Peña Grande, Prado do Inferno, Xestido III, and Cova do Rei Cintolo.¹⁵¹ Although their lithic industries are similar to those in Cantabria, there is nothing comparable to the “classic” Azilian of the Vasco-Cantabrian zone in terms of the harpoons or painted pebbles.

Asturian-like picks have been recovered along the coast of Galicia and north Portugal, such as at Santa Tecla and Vila Praia de Âncora. However, there are no good contexts with dates for these sites. Complicating their dating is the fact that tools like these, made of quartzite cobbles, have been found at Iron Age castros and Roman sites nearby.¹⁵²

To the south, during the Epipaleolithic/Early Mesolithic of central and southern Portugal, beginning ca. 9,500 cal BCE, a set of distinctive site types and lithics are known. As in Galicia (and in contrast to the Vasco-Cantabrian

region), bone harpoons have not been found. This does not appear to be due to poor preservation, as bones of fauna have been recovered from Epipaleolithic/Early Mesolithic sites in Portugal.¹⁵³

Three types of sites and site locations have been identified.¹⁵⁴ Araújo suggests that these site types were integrated in a system of “functional complementarity” and are not material expressions of chronological differences.¹⁵⁵ The most common are shell middens (generally small) located along the coast and estuaries of the Estremadura, Alentejo, and Algarve. At these sites, expedient flake tools made from local raw materials and molluscs are found. The molluscs represent the remains of shellfish that were gathered and consumed at the sites. Early Mesolithic shell middens include Vale de Frade and Toledo.¹⁵⁶ The second type are the large open-air sites situated in the interior, often near good flint sources, and found with a diversity of lithic forms, including microliths and macroliths. These include Areeiro III in Rio Maior¹⁵⁷ and Vale Sá in the Mondego Valley.¹⁵⁸ The third group includes rock-shelters and caves located in the interior of the limestone massifs of the Estremadura. These sites are associated with microlithic tools, and their occupants had diets based on terrestrial resources, although marine molluscs are also represented. They include Buraca Grande¹⁵⁹ and Lapa de Picareiro.¹⁶⁰ Picareiro is a large cave used by human groups between the Middle Paleolithic and Iron Age, including the Epipaleolithic/Early Mesolithic (10,300–9,800 cal BCE – layer D). Rabbits were a significant part of the occupants’ diet; large fauna, like red deer and wild boar, played a minor role.

In general, lithics are primarily made from flake or bladelet components and microlithic. They include backed bladelets and points, suggesting that the bow and arrow were used.¹⁶¹ In addition to microliths, macrolithic industries made from cores are also known. One such industry is the Mirian/Mirense, named after the Mira River in southwest Alentejo.¹⁶² The Mirense was first defined by Breuil, Orlando Ribeiro (1911–1997), and Zbyszewski in 1941 and is known for its type artifact, the Mirian axe or hoe (Figure 4.11). Mirian axes are generally between 15 and 25 cm long and weigh between 300 and 1,500 g. Sites with Mirian axes are found on sandy dunes near marine and estuarine resources along the Atlantic. Because of the “crudeness” of these tools, they were first thought to date to the lower Middle Paleolithic (and named Languedocense, after the French industry). In the 1970s, following work carried out by Penalva, the post-Paleolithic date of these tools came be recognized. One of the most informative Mirian sites is Palheirões do Alegria, which was discovered by Penalva and radiocarbon dated to the seventh millennium BCE (although Upper Paleolithic and post-Mesolithic materials have also been found). This open-air site was located on sandy dunes. Archaeologists found eighteen hearths and over 33,000 lithics made primarily with local stones (greywacke, quartz, quartzite, schist). Although the site was made up of a series of occupations, they were conflated into one horizon by aeolian



Figure 4.11 Mirian axes: (a) surface find in Barranco das Quebradas (Sagres); (b) from the Chalcolithic/Bronze Age site of Catalão (Sagres).

Photos: N. Bicho

erosion. Experimental studies as well as the location of Mirian sites in sandy dunes suggest that Mirian axes were not actually used as axes (i.e., for cutting trees), but for digging in the sand for shellfish.¹⁶³

Archaeologists have long wondered whether Early Mesolithic sites with macroliths reflect differences in cultural, functional, or raw material constraints.



Figure 4.12 Barca do Xerez de Baixo, hearth excavated in Area 2.
Photo: A. C. Araújo

Insights into this question have been provided by the stunningly preserved open-air site of Barca do Xerez de Baixo located along the margin of the Guadiana River.¹⁶⁴ The site was discovered in 1998 in a survey conducted in a mitigation study associated with the building of the Alqueva Dam. It is now submerged. Barca do Xerez de Baixo was occupied during at least four phases over a span of 600 years. Well-preserved hearths (Figure 4.12), animal bones (aurochs, red deer, horse, and rabbit), and over 38,000 lithic artifacts (primarily of quartzite) were recovered in excavations that took place between 1998 and 2002. The excellent preservation of the site was due to its rapid burial by wind-blown sands. Based on the association of fauna, features, and lithics (and use-wear studies),¹⁶⁵ Barca do Xerez de Baixo has been interpreted as a butchery camp where Early Mesolithic people manufactured expedient tools made from local cobbles that were used in carcass processing, including the treatment of animal hides. Technological studies, including lithic refitting and spatial analyses, show that manufacture and use of these tools took place at the site. Thus, it appears that raw material availability as well as site function (butchery, hide processing) were important factors in the production of these macrolithic tools (as at Palheirões do Alegria). Prior to the discovery of Barca do Xerez de Baixo, it had not been thought that Mesolithic peoples occupied the interior of the peninsula, even sporadically. Its discovery underscored the fact that much of what we know is due to where research is intensively conducted.

In contrast to the Late Mesolithic, burials of the Early Mesolithic are rare, and the few that are known (Casal Papagaio, Toledo, Pinhal da Fonte) consist



Figure 4.13 The Sado Estuary in the area of the shell middens.

Photo: A. C. Araújo

of disarticulated human bones whose association with other site features is unclear.¹⁶⁶ This suggests that the burial of the dead (at least in ways that leave physical remainders of the body behind) seems not to have been a common practice in the Early Mesolithic.

Beginning ca. 6,400 cal BCE, during the Mesolithic/Late Mesolithic, important changes occurred in settlement pattern, subsistence, lithic technology, and burial practices. However, some of these changes were more matters of degree than of kind. For example, shell middens are known in both the Early and Late Mesolithic. Human groups gathered in dense aggregations around the rich estuarine ecotones of the Tejo (Muge and Magos), Sado, and Mira rivers (Figure 4.13). These were landscapes newly created by rapidly rising sea levels triggered by glacial melting during the Flandrian transgression. The Late Mesolithic was the era of the large shell middens. These were mounds of shells, which could be over 5 m thick and over 2,500 m² in area, as in the Muge sites,¹⁶⁷ left behind after countless meals, which “transformed the original topography of the land.”¹⁶⁸ People lived in association with these middens, as postholes and hearths are often found (e.g., Moita do Sebastião).¹⁶⁹ Some were also places to bury the dead (discussed further later). The larger and more continuously occupied of the midden sites have been viewed as residential base camps, while the smaller ones, with fewer artifacts, fauna, and burials, were likely logistical camps.¹⁷⁰ Not all base camps were shell middens, however. Vale Marim I was a large (1 ha) open-air settlement. It is currently located on the Atlantic coast, but at the time of its occupation ca. 6,075–5,840 cal BCE, it overlooked a 1 km wide coastal plain.¹⁷¹ Several domestic

structures with hearths made up of fire-cracked rocks were found at Vale Marim I. In association with these hearths, flint, quartzite, and greywacke tools were manufactured and fish was processed, as the few preserved fish bones suggest. *Pinus pinea* charcoal from the site attest to a milder climate.

The relationship between this shift in lifeways, settlement pattern, and the 8.2 kya cold event has been the subject of debate.¹⁷² The sudden release of cold freshwater into the North Atlantic would have abruptly raised sea levels, flooding coastal zones and forcing people onto higher ground near estuaries.¹⁷³ However, it is unclear what the role of shell resources was in the diet of peoples living prior to then, given that there are few human remains associated with these sites.¹⁷⁴ Lithics also underwent changes. Geometrics produced using the microburin technique are represented at all Late Mesolithic sites and become the most important tool type (known as “blade and trapeze complex”), while backed and marginal retouched tools are rare. Some have suggested that the origin for the blade and trapeze complex was the Capsian tradition of the north-central African coast.¹⁷⁵

Investigations of the Muge shell middens, which include Cabeço da Amoreira, Cabeço da Arruda, and Moita do Sebastião, played an important role in the development of archaeology in Portugal. Carlos Ribeiro, with a team of researchers from the Comissão Geológica de Portugal (Portuguese Geological Commission), discovered the first of the Muge sites – Arneiro do Roquete and Cabeço da Arruda – in 1863.¹⁷⁶ In subsequent years, additional sites were identified in the Tejo and Sado valleys. Early in the investigations, Ribeiro believed the middens were natural features. However, after forty-five skeletons were discovered at Cabeço da Arruda in 1864 and with knowledge of the Danish *kjökkenmøddinger* (shell middens) circulating among European scholars, Ribeiro recognized that *concheiros* were the result of human activities. Interestingly, when the Danish shell middens were originally found, they, too, were believed to be natural phenomena. It took the investigations of the first Kjøkkenmødding Committee, made up of prehistorian Jens Jacob Asmussen Worsaae (1821–1885), geologist Johann Georg Forchhammer (1794–1865), and zoologist Japetus Steenstrup (1813–1897), in the 1840s and 1850s to demonstrate that they were cultural.¹⁷⁷ In 1880, Ribeiro presented his findings at the 9th International Congress of Anthropology and Prehistoric Archaeology, held in Lisbon (the same meeting that Vilanova presented the art of Altamira), and congress attendants had the opportunity to visit the excavations. Subsequent excavations at the Muge and Sado sites and specialist studies of the human remains (of over 300 individuals), fauna, lithics, and sediments have generated a large body of knowledge.¹⁷⁸ Because of the methods and practices of research conducted in the nineteenth century, challenges exist in understanding the original contexts of some of the finds. For this reason, re-excavations and reanalyses of older excavated materials were undertaken. Two major projects – one centered on the Muge sites and the second on



Figure 4.14 Shell middens in the Sado Valley. Poças de São Bento, Area 11, Profile E. Photo: A. C. Araújo

the Sado sites – promise important developments in the future, particularly in elucidating intra- and inter-site variability (Figure 4.14). To commemorate the 150 years since the discovery of the Muge shell middens, a conference was held in 2013, and current and past investigations were published in a two-volume set.¹⁷⁹

Other midden sites excavated using modern techniques include Rocha das Gaivotas,¹⁸⁰ Vidigal,¹⁸¹ and S. Julião.¹⁸² Overlooking the Queimada stream near the Mira Valley, Vidigal is an extensive midden – made up of limpets, whelks, and mussels – covering an area of about 5,000 m². The midden layer is 10–20 cm thick. S. Julião is situated on the right margin of the Ribeira do Falcão and is made up of four known midden “nuclei” (A–D), which produced evidence for shellfish exploitation between the eighth and third millennia cal BCE.

Lubell and colleagues used C/N isotopic studies in conjunction with dental wear and AMS dates to compare dietary changes between the Mesolithic and Neolithic of Portugal and included individuals from the Muge sites of Moita do Sebastião and Cabeço da Arruda.¹⁸³ They showed that Mesolithic groups consumed a homogeneous diet of marine and terrestrial foods that shifted to terrestrial sources in the Neolithic, ca. 5,000 cal BCE, with dental attrition tracking with these dietary changes. They later coupled this work with demographic studies comparing Cabeço da Arruda and Moita do Sebastião with the Neolithic site of Casa da Moura.¹⁸⁴ Their analyses suggested that population growth during the Mesolithic, due to an increase in fertility, was impacted by rising sea levels in the Tagus Valley and its tributaries and triggered a move to uplands and increase in population growth in the

Neolithic. Later studies using a larger data set confirm a significant difference between Mesolithic and Neolithic dietary practices,¹⁸⁵ without any evidence for diets that represent a transitional phase. Some individuals sampled, however, show stable isotope values that suggest a partial reliance on marine or aquatic foods even in the later Neolithic period.

In addition to diet, insights into the domestication of dogs in the Mesolithic was provided in the discovery of a complete dog skeleton from Cabeço da Arruda, dated to 6,000 cal BCE.¹⁸⁶ Another dog burial was identified at Poças de São Bento shell midden, in the Sado.¹⁸⁷ These burials suggest shifting and more interdependent relationships between humans and other animals during the Mesolithic.

Peyroteo Stjerna conducted a systematic analysis of the Mesolithic burials of the Muge and Sado shell middens, integrating bioarchaeological studies, archaeoethnology, and radiocarbon/Bayesian analyses.¹⁸⁸ These burials are a particularly rich source of information about Late Mesolithic life in western Iberia, as there are around 300 individuals from the Muge sites and 100 from the Sado sites. Rather than viewing these burials as functioning to assert territorial claims over limited resources, or as bodies that simply record dietary preferences, her work takes a fine-grained approach to intra- and inter-site variability. Although often discussed together, the shell middens at these sites are distinctive. Those in Muge are the more typical deep shell midden mounds, while those of the Sado are shallower and discontinuous. Burials can be found within the middens, while some were placed at the bottom of the midden, underneath the shell layers. Peyroteo Stjerna's analyses also revealed patterned differences in diet between the Sado burials found on the west (with mixed terrestrial and marine-estuarine sources) and those on the east (with terrestrial sources), and an increase in heterogeneity among the Tejo sites over time. Despite variability in diet among the Muge and Sado communities, burial rituals were relatively standardized across these sites – but, interestingly, distinctive from contemporary sites in the Iberian Peninsula, where burial of the dead was rare. At Muge and the Sado, the dead were buried in graves with sloped floors, on their back with the lower limbs contracted (Figure 4.15) in their common rituals, they were “bound by shared social and historical practices.”¹⁸⁹

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Given the ample resources available to Late Mesolithic communities around these rich estuaries, a major question facing archaeologists is why, beginning ca. 5,500 cal BCE, did peoples living along the Atlantic façade begin to incorporate animal and plant domesticates into their diet? Early Neolithic populations occupied diverse landscapes. These included low-lying areas, such as Vale Pincel I,¹⁹⁰ mountain tops, such as São Pedro de Canaferim,¹⁹¹ and hilltops, such as Castelo Belinho,¹⁹² but they also continued using caves, such

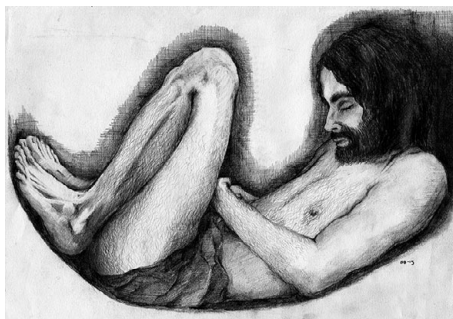


Figure 4.15 Typical position of Mesolithic burials of the Tejo and Sado.

Drawing: Susanna Berglund; from Peyroteo Stjerna 2016b, fig. 5.45

as Caldeirão,¹⁹³ and rock-shelters, such as Buraco da Pala¹⁹⁴ and Penedo dos Mouros.¹⁹⁵ When architectural elements can be identified, they include long-houses (as evidenced by postholes) and storage pits, as found at Castelo Belinho.¹⁹⁶ At the same time that new subsistence practices were adopted, people began to make and use pottery. The earliest of these ceramics are impressed (Cardial and non-Cardial) and plastic (Figure 4.16).¹⁹⁷ However, with the exception of some sites, such as Almonda Cave¹⁹⁸ or Cabranosa,¹⁹⁹ Cardial ceramics are, in fact, rare.²⁰⁰ Polished stone tools, such as axes, adzes, and hammers, also characterize these early agrarian sites. Economic and social changes took place against the backdrop of important environmental shifts – most notably, the beginning of the retreat of the major estuaries, such as the Tejo and Sizandro. This was due to a deceleration in the rate of sea level rise, which was a process that continued between the sixth and fourth millennium cal BCE.²⁰¹ Human groups also began to leave enduring marks on the landscape, sometimes even triggering erosional events.²⁰²

The traditional view proposed to explain the emergence of agrarian lifeways along the Atlantic façade was that native hunter-gatherers gradually adopted elements of the farming package. This can be described as kind of indigenist/gradualist model. There is some support for this model, or at least evidence that suggests the involvement of indigenous choice and agency. For example, at Vale Pincel I, in a level dated to 5,500 cal BCE, microliths related to the local Mesolithic tradition – geometrics made using the microburin technique – were found in association with impressed (non-Cardial) ceramics and polished stone axes.²⁰³ Also, at many sites, Neolithic levels with domestic animals and Cardial ceramics also have wild animals, such as boar and red deer.²⁰⁴

However, a critical analysis of the radiocarbon dates documenting this process in the western Mediterranean has challenged this model.²⁰⁵ When only short-life samples (bones of humans or animals or seeds of domestic plants) are used, in order to avoid the problem of the old wood effect, their dates cluster at ca. 5,500 cal BCE, which are statistically identical to dates for early farming in central-northern Italy. This suggests that the earliest farming in

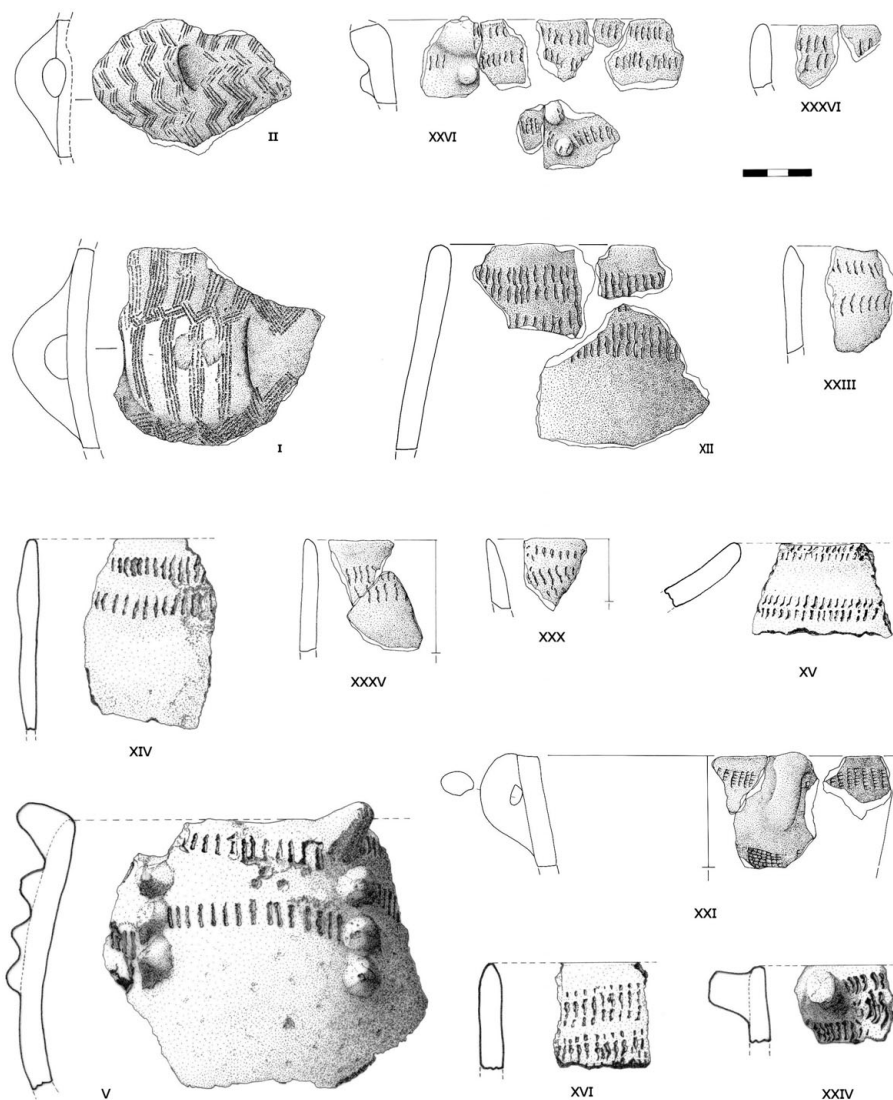


Figure 4.16 Early Cardial ceramics from Galeria da Cisterna, Portugal.

From: Zilhão 2009, fig. 7

Iberia was due to rapid colonization of pioneer groups who used Cardial pottery and came from the Mediterranean coast. Parallels between Cardial ceramics in southern Iberia and North Africa, such as at Caf Taht el Ghar (Tetuán),²⁰⁶ and genetic evidence suggests that demographic movements also occurred across the Strait of Gibraltar during this time, and models for colonization must take these into account.²⁰⁷ These pioneer groups initially settled in areas not occupied by hunter-gatherers (e.g., not in the Muge and Sado areas), where they thrived for about 500 years. Beginning ca. 5,000 cal BCE, farming practices expanded into areas where hunter-gatherers had

lived,²⁰⁸ most likely due to demographic growth. Some evidence challenging this migrationist model comes from craniometric studies of Mesolithic and Early Neolithic samples from central and southern Portugal, which show demographic continuity over time.²⁰⁹ Some researchers have argued that the dichotomization of a diffusionist or evolutionary model is itself erroneous.²¹⁰

Paleoclimatological evidence suggests there was a climatic/environmental crisis between 6,000 and 5,300 cal BCE, which impacted the terrestrial and marine fauna available.²¹¹ Dean analyzed the role of barnacle consumption at the site of Rocha das Gaivotas in mitigating the resource depression that accompanied the transition from foraging to farming in the region,²¹² and later demonstrated a causal relationship between resource stress and the development of agriculture.²¹³ This is in contrast to Stiner and colleagues,²¹⁴ who argued that shellfish harvesting between the Mesolithic and Neolithic in the Algarve shows little change, suggesting the persistence of hunter-gatherer populations.

Major challenges still exist in testing these models. For example, direct evidence for cereal agriculture in Early Neolithic Portugal is largely lacking, as flotation is not a standard practice. To date, there are only a few sites with botanical evidence for domesticates in the Early Neolithic. One is the rock-shelter of Buraco da Pala, dated to 5,000–4,800 cal BCE.²¹⁵ There, legumes, such as *Vicia faba*, and wheat and barley were recovered. At Lapiás das Lameiras, cereals and pulses were found in storage facilities.²¹⁶ Given that botanical evidence is scarce, some archaeologists have taken to alternative approaches to studying cereal agriculture, such as lithic use-wear studies, which can reveal the use of tools as sickles. Such work was carried out at Cortiçóis,²¹⁷ Vale Píncel I,²¹⁸ and Valada do Mato.²¹⁹ Of course, sickles were not always used for the harvesting of domesticates, and it is not certain that significant differences exist between the use-wear of wild and domestic cereals. However, there are no wild cereal species in the Mediterranean, so it is presumed that the wear found on sickles derives from their use with domesticates. A similar problem exists for the study of fauna, as there are few Early Neolithic sites with faunal remains.²²⁰

Little is known about mortuary practices of these earliest agrarian communities. Some burials have been discovered in close association with settlements, such as the individual pit graves at Castelo Belinho, dated to the second half of the fifth millennium cal BCE.²²¹ The dead, which included young children and older adults, were generally buried in a flexed position and provided with flaked lithics, ceramics, and broken grinding stones. One individual, a thirty-five-year-old (or more) adult, was buried with twenty-two bracelets – eleven on each forearm – made from *Glycymeris bimaculata*, a large Mediterranean bivalve. This is a spectacular find, given that only twenty other such bracelets have been found in all of Portugal from the Neolithic through the Chalcolithic. This find suggests that this individual enjoyed a special status.

Proto-megalithic structures with burials are known in southern Portugal and argued to date to the mid-fifth millennium BCE, although none have been directly dated. These are defined as small enclosed chambers covered by a mound. One of these is Marco Branco, which had a small chamber (1.7×1.35 m) partially dug into the bedrock delimited by a set of low (less than 1 m) standing stones and covered by a mound.²²² It has been presumed that with the dating of simple chambered megaliths, like Carapito I and Antelas, to the late fifth/early fourth millennia cal BCE (see later), protomegaliths predate them.

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Contemporary with the last Iberian communities who relied exclusively on hunting, gathering, and fishing, and the earliest farming communities, the first megaliths were erected in the sixth millennium cal BCE (Figure 4.17). Megalith building and their use continued through the third millennium cal BCE,

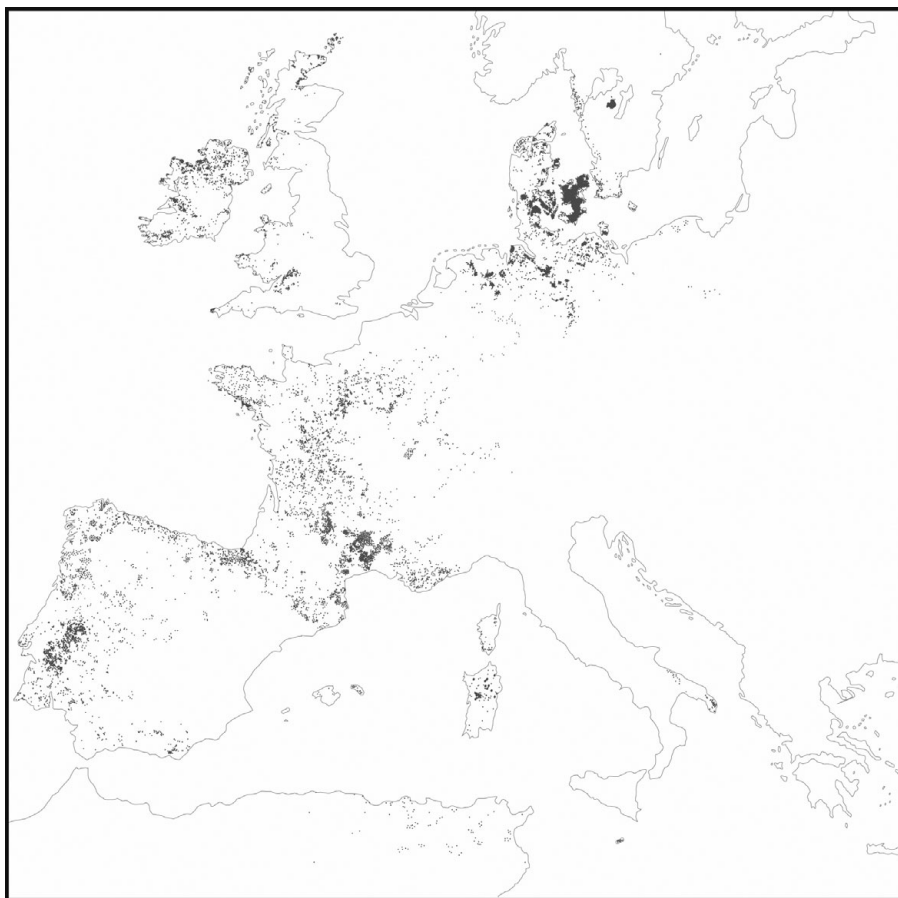


Figure 4.17 Distribution of megaliths in Western Europe.

From: Laporte and Bueno Ramírez 2015, fig. 22.1

and, therefore, will be revisited in the [next chapter](#). The megaliths of the western façade of the Iberian Peninsula are not only of importance to understanding the lives of early agrarian communities in the peninsula, but they may also help elucidate the processes underpinning megalith-building in other parts of Europe, as they represent some of the first monumental stone constructions built in Europe. The Iberian monuments are roughly contemporary with the earliest megaliths in western and northern France.²²³ The dating of menhirs and cromlechs to the sixth and fifth millennium cal BCE suggests that they were an outcome of the incorporation of Neolithic lifeways by indigenous peoples along the Atlantic.²²⁴ However, as discussed later, the dates for these earliest megaliths are all disputable.

The first megaliths were individual standing stones, known as menhirs, and megalithic enclosures or stone circles, sometimes called cromlechs. Although rare, menhirs are found in significant concentrations in southern Portugal, the Alentejo, and Algarve. Several hundred are known. There are also menhirs in the middle Tejo Valley, northern Portugal, and Galicia.²²⁵ Menhirs were made of granite or limestone, from unmodified blocks of stone, or modified and smoothed stones, or stones that were engraved and carved in relief ([Figure 4.18](#)). Their phallic form and/or their imagery (e.g., Padrão, Outeiro, and Caramujeira 1) suggest that some were related to male sexuality. The imagery on others (“vulva”), as at Vale da Lama and Rodicol, has been related to female sexuality.²²⁶ Other menhirs have imagery associated with female and male sexuality, such as those at Vale da Lama, Courela do Castanheiro, and Caramujeira.²²⁷ Some scholars see menhirs as anthropomorphic, given that features like mouths, eyes, or noses are sometimes depicted, such as at Vale Maria do Meio.²²⁸ The small menhir of Cegonhas, which has not been directly dated, was made from a greywacke grinding stone placed on its side and supported in its socket by smaller stones.²²⁹ Although this use of a grinding stone as a menhir is unique, grinding stones are sometimes found in association with mortuary sites from diverse time periods in Iberia, including the Bronze Age, perhaps owing to their association with fertility and subsistence – themes often linked to mortuary rituals.²³⁰

Megalithic enclosures or cromlechs are rarer than menhirs and primarily known in the Alentejo, in the district of Évora. Some enclosures were made up of a series of menhirs, such as Fontainhas,²³¹ and others incorporated menhirs in their plan, such as Almendres.²³² Other cromlechs include Herdade de Cuncos,²³³ Vale d’El Rei,²³⁴ Couto da Espanhola,²³⁵ and Almendres.²³⁶ Given that cromlechs are regularly oriented to the east (as with later megalithic burials), it has been suggested that their plan was related to the position of the sun at the beginning of the spring, or end of summer, or the spring full moon.²³⁷

The largest and most architecturally complex of the cromlechs is Almendres ([Figure 4.19](#)).²³⁸ The first investigations at Almendres were conducted in 1966 by Henrique Leonor Pina.²³⁹ Pina – in collaboration with “local hunters, rural guards, and herders”²⁴⁰ – also discovered the cromlech of Portela de Mogos,

(a)



(b)



(c)



(d)



Figure 4.18 Menhirs of Portugal.

Photos: M. V. Gomes: (a) Pedra dos Namorados; (b) Caramujeira; (c) Outeiro; (d) Padrão

(a)



(b)

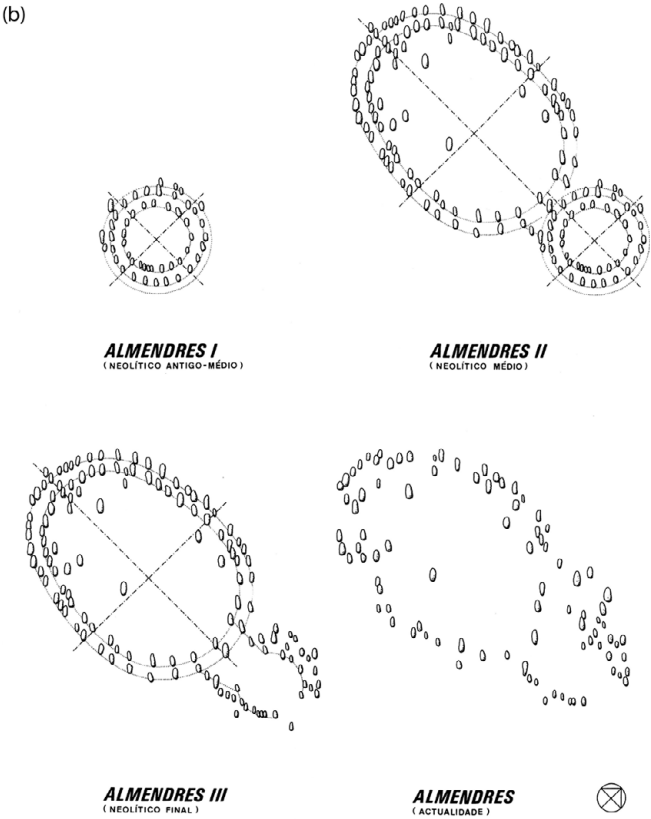


Figure 4.19 (a) Cromeleque de Almendres; (b) Almendres, changes in plan over time.
Photos: (a) M. Schlütter, 2003. (b) M. V. Gomes

the menhirs of Herdade das Reboladas and Herdade da Correia, and the enormous Anta Grande do Zambujeiro, all in the Évora region (see [Chapter 5](#)). Because of Pina's important contributions to the study of menhirs, the prehistorian Octávio da Veiga Ferreira (1917–1997) nicknamed him the “man who invented the menhirs.”²⁴¹ Although Almendres, which was classified as a National Monument in 2015,²⁴² has not been radiocarbon-dated, archaeologists believe it was constructed and modified between the sixth and third millennia cal BCE.²⁴³ Almendres is situated on a gently sloping hill, which faces the east and overlooks the Évora plain. Originally, it was made up of over 100 monoliths, but only around ninety-four remain. Analyses of the construction and associated materials suggest that the site has two enclosures, which were constructed at different times. The first – two concentrated circular rings – was erected during the Early Neolithic. The second – two larger concentric rings on the former monument's northwest – was added during the Middle Neolithic. During the Late Neolithic, it appears that the older enclosure was opened up to create a kind of atrium to the larger ovoid enclosure. Of the existing stones, about a dozen were decorated with engravings or relief designs that consist of curved staffs/bacula/crosiers, circles, crescents, and cup marks. The artifacts found with the monoliths include hammerstones, grinding stones (some of which were used to support the monoliths), a polished stone axe, and ceramics.

There are major challenges to dating and studying menhirs.²⁴⁴ Relatively few exist, in comparison to chambered burials. Indeed, the Leisners, in their exhaustive monographs on the Iberian megaliths, practically ignored menhirs and cromlechs, with few exceptions (such as Vale d'El Rei, Tourega, and the menhir at Vale de Rodrigo).²⁴⁵ This was the case even though, by the nineteenth century, Estácio da Veiga had identified menhirs in the Algarve,²⁴⁶ and Simão Ferreira published the menhir of Luzim in Penafiel.²⁴⁷ Artifacts are also rarely found with menhirs and cromlechs. Dating of construction episodes is further complicated by the fact that menhirs were often moved and reused as architectural elements of megalithic burials or dolmens. Even defining a menhir can be difficult, as some naturally formed rocky outcrops can have the appearance of a menhir or have cup marks on them (such as Santa Margarida, Pedra Alçada, Penedo da Cruz, and Rocha dos Namorados).²⁴⁸ A few dates have been obtained in association with menhirs that point to their construction in the sixth millennium cal BCE. Shells recovered from the menhir of Padrão returned dates between 5,500 and 5,300 cal BCE (ICEN-645; ICEN-873).²⁴⁹ Dating of charcoal from the socket of Meada, a 7.15 m tall and 17 ton monolith, returned a date of 5,010–4,810 cal BCE (Utc-4452:6022 ± 40 BP).²⁵⁰ A very early date – 7,983 and 6,203 BCE – was obtained by OSL from the socket of the menhir at Quinta da Queimada.²⁵¹ All these dates have problems, however. For Meada, the charcoal may date to a burn event much earlier than the construction of the menhir or the dates may be due to the old wood effect. In the case of Padrão,

the samples came from contexts that covered the sockets and, thus, do not date the actual construction of the monument.²⁵² The OSL date challenges our current understanding of the earliest of these monuments. For this reason, the direct dating of charcoal paint from Anta de Serramo to ca. 5,000 cal BCE (CAMS-88195:6050 $\pm$ 110 BP) is particularly important.²⁵³ Support for the Early Neolithic date for the earliest of the menhirs comes from the association of Early Neolithic settlements with menhirs and cromlechs, such as Vale Maria do Meio.²⁵⁴ A later date of 4,340–4,235 cal BCE was obtained for the menhir of Patalou,²⁵⁵ suggesting that menhir construction spanned perhaps a millennium.

Contemporary with later menhirs and cromlechs are the earliest megalithic tombs in Galicia, northern Portugal, and the Alentejo. Between 4,500 and 3,200 cal BCE, during the Middle Neolithic, communities along the western façade began erecting these monumental mortuary sites. This practice continued through the third millennium cal BCE. Few contemporary settlements are known, although investigations are increasingly focusing on such work in the Alentejo, such as at Fábrica de Celulose,²⁵⁶ and the Estremadura.²⁵⁷ This gap is due, in part, to the visibility and abundance of megaliths, particularly in the northwest/Galicia, northern Portugal, and southern Portugal (Alentejo), which have been the focus of research efforts for over 100 years. This skewing may also be due to the problems in finding what appear to have been the unimposing domestic structures of Middle Neolithic groups and dating the undecorated pottery that these mobile peoples made and used.²⁵⁸ Indeed, in many burial caves of the time, pottery is scarce or even nonexistent.²⁵⁹ When found, the ceramics have thick handles and, when decorated, they are adorned with incised decoration. The few settlements known include Magoita, Pena d'Água, and Costa do Pereiro. Zooarchaeological studies show a focus at these sites on goat herding and red deer hunting,²⁶⁰ suggesting that the first megalith-builders were mobile hunters and transhumant pastoralists.²⁶¹ These herders and hunters buried their dead in caves, rock-shelters, and megaliths. Cave sites include Casa da Moura,²⁶² Cadaval,²⁶³ and Lugar do Canto.²⁶⁴

The most significant Middle Neolithic cave burial known is Algar do Bom Santo. This is not only due to the site's exceptional preservation and associated finds, but the careful excavation and interdisciplinary studies conducted on its materials.²⁶⁵ Algar do Bom Santo dates to 3,800–3,400 cal BCE, which means that “the Neolithic people who deposited their dead at Bom Santo may have also witnessed, or even actively participated in, the building of the earliest dolmens in southern Portugal.”²⁶⁶ Bom Santo is a large cave, about 50 m long and 16 m deep, on the cliff of the Serra de Montejunto. Speleologists discovered the cave in 1993, when, at the time, vegetation, sediments, and a large boulder blocked its entrance. After investigators removed the large boulder – which may have been intentionally placed by the site's last users to close off the cave – they immediately observed articulated skeletons, disarticulated bones, and artifacts (shell bracelets, polished stone axes, flaked lithics, bone awls,

ceramics, etc.) on the surface and in niches along the cave wall (Figure 4.20a). The preservation of these remains was exceptional. Even human footprints, believed to date from the Neolithic, were observed (Figure 4.20b). Excavations were undertaken during the 1990s in the cave's different rooms. This work revealed that this was a large necropolis, which extended over 285 m². The dead were subjected to a range of treatments, including primary burials as well as secondary manipulation of the skeleton, with attention paid to the cranium and lower long bones. The richness and preservation of the osteological assemblage (minimum number of individuals between 121 and 127) and the meticulous excavation of the site has made it a rich source of information on diet, ancestry, and mobility. Strontium isotopic data show that the majority of the individuals sampled – as well as the ovicaprid remains – were nonlocal to the Jurassic limestone massif where the site was located. Thus, this population appears to have been a mobile group of transhumant pastoralists who lived most of their lives in a different geological landscape, such as the Upper Tejo Valley or Alentejo. These individuals also consumed a high level of riverine/estuarine resources (20–25 percent). Genetic studies of the individuals point to high levels of mitochondrial hypotype and haplogroup diversity, in contrast to other Neolithic sites, suggesting that the people buried were involved in exogamic practices.²⁶⁷ Similar isotopic values were found among contemporary individuals sampled from the Anta de Cabeceira in the Alentejo, which were dated to between 3,600 and 3,400 cal BCE.²⁶⁸ This suggests that groups living in the Alentejo and Estremadura were part of a large network of mobile pastoralists.

At the same time that some groups along the western façade buried their dead in caves and rock-shelters, such as at Algar do Bom Santo, others began constructing megaliths for their dead. The chronology of these first megaliths and the factors that stimulated people to carry out such labor-intensive projects are major research topics in Iberian archaeology. Megaliths display enormous variability in their location in their landscape, form, and size, and explaining these differences (whether chronological, social/economic) is an important area of inquiry. There are thousands of megalithic burials known for the Iberian Peninsula, but unfortunately many are located in acidic soils, where bones that could provide dates for the use of the sites are often in short supply. Here I begin a discussion of the earliest megalithic burials on the western façade (from north to south), which date to 4,500–4,000 cal BCE.

Megalithic burials are found along the western façade in distinct clusters. One major group is in the northwest – in Galicia and northern Portugal.²⁶⁹ Galicia has the highest density of megaliths in all of Europe, with 4,000 megaliths in an area of 30,000 km².²⁷⁰ Megaliths of northwest Iberia have a long history of research.²⁷¹ Georg Leisner carried out some of the earliest

(a)



(b)



Figure 4.20 Algar do Bom Santo. (a) View of ossuary (which was not excavated); (b) view of human footprints on thin sandy layer near entrance.
Courtesy: António Faustino Carvalho

investigations.²⁷² Another important scholar was Galician intellectual Florentino López Alonso-Cuevillas (1886–1958), who was one of the most active researchers of Galician megaliths between 1925 and the 1950s. López Alonso-Cuevillas began his career writing literary criticism and politics and later turned to the study of prehistory, particularly megaliths and Iron Age castros.²⁷³ In a piece published posthumously, he proposed a unilineal sequence for Galician tombs, with the earliest being the smaller chambered tombs without a passage or with a short passage and associated with geometric microliths, polished axes, and undecorated pottery.²⁷⁴ Tombs with the longer corridors were believed to postdate these. Subsequent investigations tethered to radiocarbon dates supported López Alonso-Cuevillas' model as well as revealed insights into the tempo of tomb construction, although it was also found that multiple forms of tombs were typically in use at the same time.²⁷⁵ These analyses demonstrated that the earliest Galician tombs were built ca. 4,300 cal BCE, with an intense building period between 3,900 and 3,700 cal BCE. The construction of longer passage tombs began ca. 3,800 cal BCE and replaced the simple tombs ca. 3,500 cal BCE. A series of radiocarbon dates were obtained on charcoal from Dombate, a large passage grave and, indeed, one of the largest in Spain.²⁷⁶ The dates and associated excavations show that the site began as a simple chamber in the late fifth millennium cal BCE, which was destroyed prior to 3,700 cal BCE and replaced by a passage grave used until 2,800–2,700 cal BCE.²⁷⁷

In northern Portugal, the oldest megaliths are associated with geometric lithics, blade tools made from imported flint, amphibolite axes and adzes, and beads of schist and greenstone (variscite). These oldest tombs, which range in date from 5,200 to 4,000 cal BCE, include Outeiro de Ante 3 (Gif 4857:5780 $\pm$ 80 BP; 4,810–4,450 cal BCE),²⁷⁸ Antelas (4,300–4,000 cal BCE), and Carapito I (4,000–3,800 cal BCE).²⁷⁹ Orca do Folhadal and Pramelas were also erected during this early period of megalith construction, but they were dated through their material culture.²⁸⁰ Several of these dates were obtained from charcoal or sediments from the lower levels of the mounds and, thus, have been an object of criticism. More recent dates from Galicia confirm, nonetheless, the early dates of monument construction in the northwest. These include dates from Forno dos Mouros 5, from sediments inside the earlier of the two chambers: 5,635 $\pm$ 50 BP (4,552–4,351 cal BCE; Ua-20009),²⁸¹ and Coto dos Mouros, from an AMS date of painting on the orthostats: the older of which was 5,540 $\pm$ 70 BP (4,540–4,240 cal BCE; CAMS-83631).²⁸² One of the most impressive of the painted megaliths is Antelas (Plate 4). Using image enhancement methods, including D-Stretch, most of the orthostats were found to have been painted in red and black pigments. On the orthostat on the back wall of the chamber is its most stunning image. It is a large rectangular figure with possible arms or legs emanating from its four corners and atop it, a mask-like head. To its sides

are zigzags and other geometric patterns.²⁸³ What these images represent or evoked will never be known, but what they do tell us is that the interior of megalithic chambers were spaces of complex actions and multisensorial experiences, including visual ones.

The Alentejo is another core zone where megaliths are found. Because of the concentration of these tombs and their relatively easy access, given the open landscape of the region and its proximity to Lisbon, prehistorians have long dedicated themselves to their study. The most notable investigations were the sustained contributions of the Leisners.²⁸⁴ As in Galicia and northern Portugal, one of the major challenges to dating the megaliths of the Alentejo are the acidic soils. An early and important project dedicated to generating a chronology of megalithic tombs in Portugal, focusing on those in the Alentejo and Estremadura, was conducted by Whittle and Arnaud.²⁸⁵ Given the problems associated with preserved bone and seeds, they carried out thermoluminescence dating on ceramics found in tombs to establish a basic chronology. Their work contributed to assessing two models: (1) the progressivist model, which argued that Neolithic peoples constructed increasingly large and more complex tombs over time (associated with an indigenous origin for the Iberian megaliths) and (2) the degenerative model, which saw the largest tombs built first and the smaller and less complex ones later (which would perhaps support a colonialist model). Although the standard deviations on the TL dates are substantial, this work provided a more solid foundation for discussing the chronology of tombs. Based on the dates obtained and associated material culture, the earliest megaliths were found to be the simple chambered tombs, like Poço da Gateira I (TL date: 4510 ± 360 BC). The tomb has an elongated and polygonal chamber, 3 m in diameter, and a short (1.8 m) corridor; artifacts found in the chamber and corridor included twelve polished stone axes (of cylindrical section), twelve adzes, twenty-two microliths, and spherical and undecorated vases with *almagra* surface.²⁸⁶ Anta 2 de Gorginos also represents one of the earliest of the megalithic tombs in the region (TL date: $4,440 \pm 360$ BC). It has a short corridor and comparable material culture to that found at Poço da Gateira, including a polished axe of cylindrical cross-section, flaked flint tools, and ceramic fragments with an *almagra* slip.²⁸⁷

There are megalithic structures in the Estremadura and Algarve, but the earliest of these are later than those of the Alentejo and date to the mid-fourth millennium cal BCE.²⁸⁸ They will be discussed in [Chapter 5](#).

ROCK ART OF EARLY HOLOCENE IBERIA

During the Early Holocene, a range of artistic practices can be found on the walls of caves and rock-shelters overlooking the gorges and valleys of Mediterranean Iberia as well as in interior Iberia.²⁸⁹ Three distinctive traditions are known, which differ in style, content, frequency, geographic distribution,

and – for many archaeologists – their chronology: the Macroschematic, Schematic, and Levantine traditions (Figure 4.21).²⁹⁰

The Macroschematic tradition is found on rock-shelter walls in Alicante and the surrounding region; it is relatively rare. Archaeologists of the Centre d'Estudis Contestans (Center for the Study of the Contestania Region) first discovered this art in the late 1970s/early 1980s.²⁹¹ Key sites include Pla de Petracos and Barranc del Infern.²⁹² In this style, the artists painted large (over 1 m) anthropomorphic figures with raised arms, outspread fingers, and sometimes horns on the head, alongside geometric designs. Imagery of the Macroschematic tradition, such as the figure with outstretched arms and fingers, have also been found on Cardial impressed ceramics, such as vessels from Cova de l'Or and Cova de la Sarsa.²⁹³ The overlapping distribution of Macroschematic art with Cardial ceramics suggests that it was produced during the Early Neolithic, at least in the area of Alicante, and possibly over a relatively short period of time.

Schematic rock art, which was painted and engraved, depicts humans and animals, as well as geometric designs on a much smaller scale than Macroschematic art. When Góngora first reported this art in *Antigüedades Prehistóricas de Andalucía* (*Prehistoric Antiquities of Andalusia*), based on discoveries at Cueva de los Letreros (Almería), he thought it was a form of primitive writing.²⁹⁴ Some images of this art style are also found on Cardial ceramics, as well as on impressed, incised, and painted ceramics; thus, it is argued to date to between 6,000 and 4,000 cal BCE (and even into the Copper and Iron Ages). Schematic art can be found throughout the Iberian Peninsula as well as north into southeast France,²⁹⁵ Italy,²⁹⁶ and Croatia.

Of the three traditions, Levantine rock art (*Arte Rupestre Levantino*) has attracted the most research and debate.²⁹⁷ Levantine art includes naturalistic images of humans, animals (primarily deer, wild goats, and bulls), and objects (bows, arrows, baskets, etc.) in scenes of hunting, gathering/collecting honey, fighting, and, more rarely, farming and herding. Images are painted with red, although sometimes black, white, or yellow pigments. Levantine art is found in open-air rock-shelters overlooking gorges and valleys, from Catalonia to eastern Andalucía. It has also been described in sites in the Meseta. Regional variability characterizes the art. In Jaén and Almería, for example, the art is rarer and less naturalistic than in the north.²⁹⁸ In 1998, a total of 757 sites with Levantine rock art were collectively designated a World Heritage Site, and more have been added since then. One consequence of the UNESCO designation has been the development of many sites as touristic attractions, such as the Parque Cultural de Valltorta-Gasulla²⁹⁹ and the Interpretation Centers of Montblanc and of the Abrics de l'Ermita at Ulldecona.³⁰⁰ The economic crisis of 2008, however, delayed the opening of some centers and forced the closing of others.³⁰¹ Indeed, the actual economic benefits to local communities with the creation of these centers is not entirely clear.

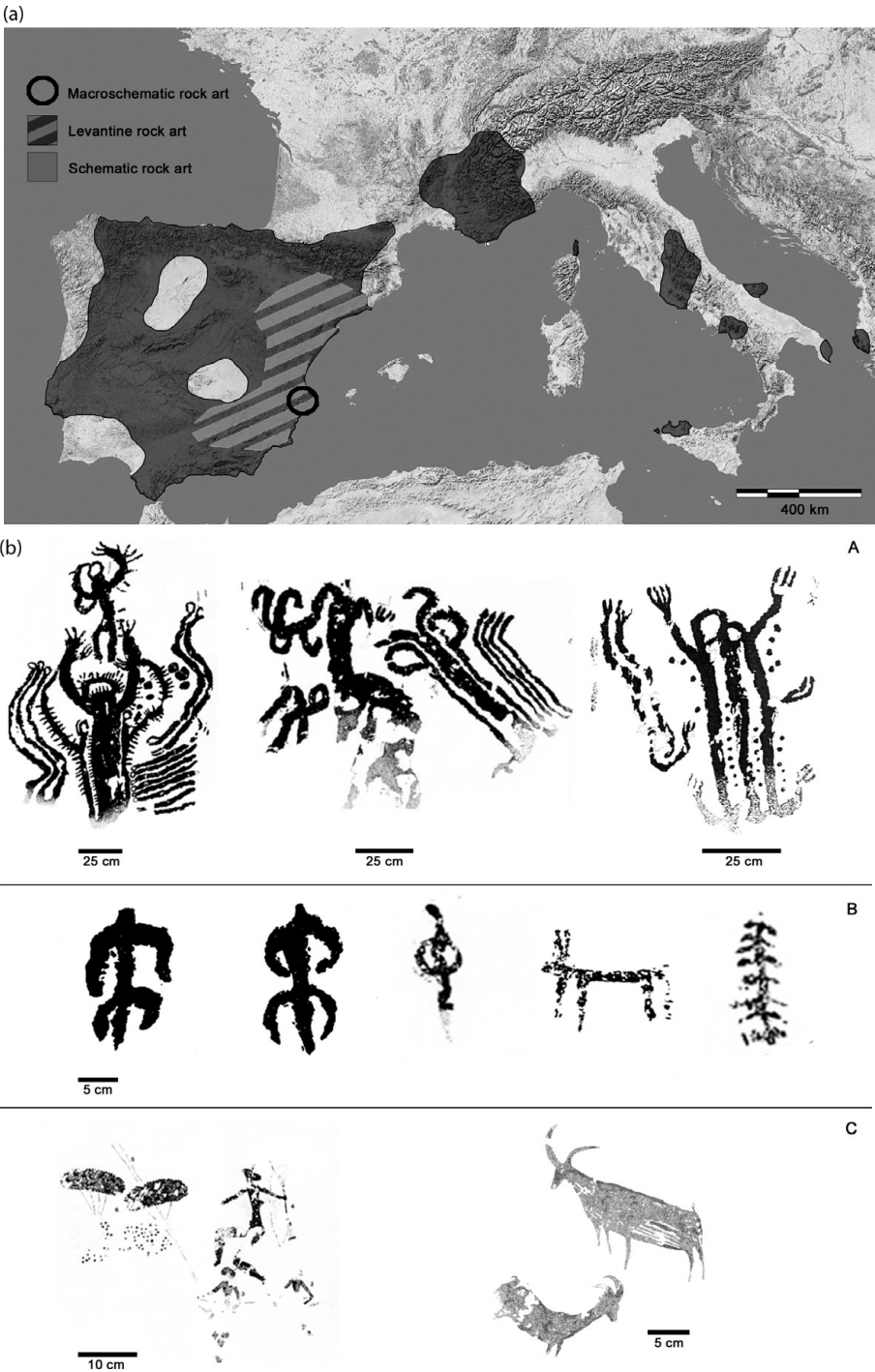


Figure 4.21 (a) Distribution of Macroscopic, Schematic, and Levantine traditions; (b) Macroscopic (A), Schematic (B), and Levantine (C) art traditions.
From: (a) Díaz-Andreu García *et al.* 2017. (b) Díaz-Andreu García *et al.* 2017, fig. 3

Emilio Marconell was the first person to write about Levantine paintings depicting bulls from the rock-shelters at La Losilla in the Sierra de Albarracín which he published in 1892.³⁰² His visit was of a “historical-literary” nature,³⁰³ and he did not recognize their prehistoric date. Scholars were only gradually recognizing the antiquity of cave art, and Cartailhac’s *Mea culpa d’un sceptique* (1902)³⁰⁴ had not yet been published. In 1905, the painter, photographer, and archaeologist Juan Cabré Aguiló (1882–1947) discovered paintings at Roca dels Moros (Cretas, Teruel, Catalonia), although, as is so often the case, local villagers had known of these paintings and believed the Moors had painted them (thus, the toponym Roca dels Moros).³⁰⁵ In 1908, the village rector Ramón Huguet reported on another set of paintings, confusingly also called Roca dels Moros (Cogul, Teruel, Catalonia),³⁰⁶ and informed Cabré Aguiló about them. Cabré Aguiló notified Breuil, who reported on them even before seeing them himself.³⁰⁷ This triggered further discoveries and reports. At the time, these scholars believed that the art was Paleolithic and that it represented a new east Iberian manifestation of the art that, until then, had only been known in northern and western Iberia, with some exceptions also in Andalucía. In 1915, Cabré Aguiló published the first major corpus of Levantine art.³⁰⁸

Analyses of style and chronology occupied much of the earliest work on Levantine art. Based on their studies of the manner in which the human form was depicted in the art at Barranco de Valltorta, which they believed to be of Pleistocene date, Obermaier and Wernert proposed three styles.³⁰⁹ These were:

- (1) Cestosomatic – “drawings of exaggeratedly elongated, stretched figures, with flattened discoid head, wide triangular chest, slender and extremely long torso, supported by long and very robust legs, whose calves are carefully executed,”
- (2) Pachypodous – “relatively short figures, with a large head generally of angular profile, short and thin torso, supported by extremely thick and robust legs,” and
- (3) Nematomorphous – “figures of linear technique and extreme stylization, disproportioned, but, nevertheless, full of life and movement.”

Hernández-Pacheco was the first to question the exclusively Paleolithic date for the art and suggested its evolution into the post-Paleolithic,³¹⁰ as did Almagro.³¹¹ They based their argument on the observations that the fauna depicted were not Pleistocene and that painting methods differed from Paleolithic cave art.

However, even nearly 100 years later, the question whether people created Levantine art (and indeed Macroschematic and Schematic art) during the Epipaleolithic/Mesolithic, or Early Neolithic, or later has not been fully resolved. One reason is because rock-shelters where the art is found are

generally devoid of archaeological materials, which suggests they were not living sites. To date them, parallels have been drawn between the rock art and portable art from other dated sites. For example, the argument for an Epipaleolithic or Mesolithic date for Levantine art has been based on its iconographic emphasis on hunting activities and stylistic similarities with some Paleolithic art.³¹² Other scholars, however, support an Early Neolithic (or later) date based on similarities between the images and those on Early Neolithic Cardial or impressed post-Cardial ceramics, such as those found at Cova de l'Or, as discussed earlier. However, it remains a possibility that the imagery had a temporal biography, in which it may have appeared in one medium at one time and in another medium at another time.

The main challenge to establishing a chronology for Levantine art, as with Macroschematic and Schematic art, is that there is little material that can be directly dated, given that the pigments and organic binders used are primarily not carbon-based. AMS dating, however, has been conducted of the oxalate crusts or patina produced by lichen and fungi that underlie or cover these paintings. These dates, when decontamination from other carbon sources is assured, can provide a *terminus post quem* or *terminus ante quem* and, therefore, bracket the time period during which the actual production of the art occurred. An early effort was conducted on the Levantine art at Cueva del Tío Modesto.³¹³ These returned three dates; two were obtained from an older accretion level, with dates ranging from 5,200 to 4,600 cal BCE, and one was obtained from the later flaking, with a date of 1,060–840 cal BCE. The actual paintings lie beneath these crusts and, therefore, should predate the early sixth to mid-fifth millennium cal BCE. Subsequently, dating was conducted of a bull painted in the Levantine style at Marmallo III, which returned a date ca. 6,000 cal BCE, indicating a pre-Neolithic chronology.³¹⁴ This was followed by dating of the rock-shelters of Ermites I and Ermites IV/Cova Fosca.³¹⁵ At Ermites I, the date of a hunting scene in the Levantine style bracketed to between 7,000 and 6,000 cal BCE (Epipaleolithic/Mesolithic). At Ermites IV, a scene of caprids and abstract images in the Schematic style dated to between 1,000 and 0 cal BCE (Late Bronze Age/Iron Age). An interesting study that helped to confirm the validity of oxalate dating was conducted on rock art imagery of eye idols painted in the Schematic style from Abrigo de los Oculados.³¹⁶ This ocular imagery is found in portable art dated to between the fourth and third millennia BCE (see [Chapter 5](#)). Samples derived from the crusts below and above the imagery indicate that the eye idols were painted between 3,630–3,365 cal BCE and 910–540 cal BCE, which correspond to the expected chronology of the motif. Even with these promising results, some have critiqued these approaches,³¹⁷ noting that dating oxalate crusts only brackets the dates for the paintings and that contamination is possible (producing older dates). However, date-bracketing is an unavoidable reality for this art, and contamination can be managed through careful

sampling, microstratigraphic analysis, microexcavation techniques, and decontamination.

Given these challenges, some archaeologists have turned to the analysis of superpositions to approach the art's relative chronology. For example, Domingo Sanz analyzed the styles and superpositions of humans depicted at the Valltorta-Gasulla sites.³¹⁸ Her work suggests a sequence with the Centelles, Cingle, and Linear styles of humans, which generally confirms the sequence proposed by Obermaier and Wernert. The Centelles style is notable for the richly adorned human figures and thick legs. Questions still remain, however, about some of the stylistic types (Civil, Mas d'en Josep, and Tolls), given that they lack superpositions. Importantly, humans can be found depicted in diverse styles at the same time. She also noted that naturalistic animals precede the depiction of humans, and when humans appear they are not part of hunting scenes. This is significant, as Levantine art is typically characterized as depicting hunting.

However, analyzing superpositions also sometimes produces ambiguous or inconsistent results. Generally speaking, for example, Macroschematic art is found beneath Schematic and Levantine styles. Macroschematic art, for example, was identified under Levantine style images at Barranco de Benalí IV.³¹⁹ However, sometimes Schematic art is found over Levantine art, as at Abric de Les Torrudanes, and sometimes the Levantine style is found over Schematic art, as at Barranc de la Palla (although not all scholars agree on the latter). Contradictory results may actually show that they were produced at roughly the same time. Given these ambiguities and contradictions, many archaeologists would argue that it is not possible to assume a clear chronological sequence from the Macroschematic, Levantine, and Schematic. The vast area in which the art is found and regional variability further complicate use of applying insights gained from superpositions to other regions.

Chronological studies have not been the only focus of research, and, indeed, prehistorians have interpreted Levantine art from a range of perspectives and have applied a diverse set of methodological and technical toolkits. Díaz-Andreu García approached the art from a historiographic perspective,³²⁰ focusing her lens on how the social context of researchers shaped interpretations of the art, particularly with respect to gender. The Marqués de Cerralbo, for example, who wrote the introduction to Cabré's book, was particularly concerned with the fact that women in Levantine art were shown to reveal an early and "distinctive" Spanish concern for modesty:

We have to consider as extraordinary the Spanish distinctiveness of always finding dressed women already in [the earlier times of] the quaternary period ... The skirt was more than a dress. It was the venerable, first testimony of a sublime feeling, the divine feeling of sexual modesty.³²¹

Díaz-Andreu García also pointed out that most humans depicted in Levantine rock art do not have clearly represented sexual characteristics, which could mean that the gender of the image was considered irrelevant. Nonetheless, whenever there are hunting or fighting scenes, or images of what are called “sorcerers,” prehistorians have generally interpreted the actors as male. In contrast, women are generally understood to be the primary actors in dance scenes.³²²

The rich iconographic compositions of Levantine art have also stimulated investigations about the evolution of social and demographic dynamics in eastern Iberia. López-Montalvo³²³ and Bea³²⁴ analyzed representations of violence in the art over time, based on the sequence originally proposed by Obermaier and Wernert (but also including the Linear style). López-Montalvo found an increase in the frequency and complexity of violent encounters depicted. She suggested this can be correlated with the increase in arrowheads found in tombs throughout the Neolithic to assert that there was an increased climate of violence in Iberia. Bea, in contrast, proposed that a “veiled violence” is evident even in the earliest expressions of this art produced in the Centelles/Paquipode style. He does so by reinterpreting scenes normally thought of as peaceful or ritual. For example, at Centelles, a scene generally interpreted as a ritual or ceremony with three individuals could be interpreted as a female with her arms behind her back being held by a male, with another figure carrying out an undetermined action over the female. Escoriza Mateu also suggested that women appear to be represented as a subordinate group, as evidenced by the scarce images of maternity and relative absence of secondary sexual characteristics.³²⁵

Perhaps because of the challenges in dating Levantine art and determining what is actually being depicted in it, some scholars have turned toward multi-sensorial archaeology,³²⁶ which does not privilege or exclusively focus on the visible. Cruz Berrocal noted the excellent sonority of many of the rock-shelters where Levantine art is found.³²⁷ Díaz-Andreu García and García Benito developed this idea by testing for reverberations and echoes using human voices, wind, and percussion instruments in Valltorta Gorge, Mortero Gorge, and Godall Mountains at sites with and without rock art.³²⁸ Their studies showed that there was a correlation between those sites with the largest number of painted motifs and high acoustic values, and that those with rock art had better acoustics than those areas without rock art. Given this, the authors suggest an important ritual component to these sites that involved sound and, probably, music. Comparison between the acoustic properties of Macroschematic, Levantine, and Schematic art have shown that there was cultural variability in the selection of soundscapes by each of the groups who produced these art styles.³²⁹

Fairén-Jiménez analyzed the scale of imagery and landscapes in which Macroschematic, Schematic, and Levantine art are found and applied GIS and visibility modeling to approach the audiences for whom the art was intended.³³⁰ She found that early Macroschematic art would have had a larger

audience, given its larger size and greater visibility, while Schematic and Levantine art was intended for a more intimate group, given that it is less visible and less accessible. This change in scale and visibility may relate to an ideological shift linked to the development of an agricultural economy and increasing social differentiation.³³¹

Going beyond chronology and specific interpretations of the imagery, some archaeologists have attempted to understand the general florescence of rock art in Iberia during the Early Holocene. Some have viewed its proliferation as an expression of the last hunter-gatherers resisting a new Neolithic lifestyle, while others see it as a product of Neolithic painters who created a new style once in a new landscape.³³² Cruz Berrocal and Vicent Garcia,³³³ based on the work of Cruz Berrocal,³³⁴ argued that the different artistic expressions evident throughout the peninsula were roughly synchronous and an integral part of the active historical process of neolithization related to the marking and transformation of landscapes involved in seasonal transhumance. Another direction of contemporary research is devoted to technical studies of the painting pigments and methods of painting³³⁵ and to the documentation, preservation, and dissemination of the art.³³⁶

NEW DEVELOPMENTS AND SOME CONCLUSIONS

Major strides have been made over the last fifty years toward understanding the histories and lifeways of peoples of the Late Pleistocene to Middle Holocene of Iberia. When Savory published *Spain and Portugal: The Prehistory of the Iberian Peninsula*,³³⁷ sites and diagnostic material culture had been described and identified, with changes explained by migration or climate change. Archaeologists had recognized the Azilian and Asturian technological complexes, excavated kitchen middens along the Tejo and Sado, and identified rock art sites on the Levantine coast. Scholars had also begun to discover and excavate early agricultural sites, which they recognized by the appearance of ceramics decorated by impressions made with the edge of the Cardial (*Cardium edule*) shell and suggested that these new practices were brought to Iberia by colonizers from the eastern Mediterranean. However, the different tempos of change experienced throughout the peninsula were not known. Nor was there information on how these changes impacted the bodies and health of people, or how they were related to changes in landscapes or the climate, or how indigenous Iberian communities and farming peoples interacted. Developments in radiocarbon dating, analyses of the reservoir effect on marine samples, and modern excavations of stratified settlement sites now provide greater regional nuance and chronological precision to the cultural changes of the Early Holocene. Analytical techniques, particularly stable isotope and aDNA, have also made it possible to better characterize the nature of population structure, diet, and mobility patterns during the Mesolithic and Neolithic.

For the Mesolithic, Iberian archaeologists now recognize two phases: an Early Mesolithic/Epipaleolithic (9,500–6,400 cal BCE) and a Late Mesolithic/Mesolithic (6,300–6,200 cal BCE). Although there were continuities, such as a preference for littoral habitats and a broad-spectrum economy involving the exploitation of wild fauna (and presumably plant foods), changes are evident in burial practices and lithic technologies. During the Late Mesolithic, groups concentrated near the rich estuaries of the western Atlantic, leaving behind large shell middens, with midden sites now also being identified along the Mediterranean. Unlike groups of the Early Mesolithic, whose lithics were dominated by microlaminar lithics and flakes that were notched or denticulated, Late Mesolithic peoples produced blades and trapezes (thus, the period is sometimes known as the Geometric Mesolithic).³³⁸ Mesolithic sites have also been discovered in regions where they were previously not known, such as in the interior of the peninsula (Portuguese Alentejo), and, thus, archaeologists have had to rethink their understandings of how farming groups interacted with indigenous foragers who also settled in these areas. Developments in the dating of oxalate crusts, which can underlie and cover rock art, have allowed archaeologists to more precisely date Levantine rock art, with some of these dates pointing to the production of at least some of this art during the Mesolithic. Genetic studies of two individuals recovered from the La Braña-Arintero cave site in northern Spain provided the first mtDNA for the European Mesolithic.³³⁹ The DNA of these individuals indicate they are not related to Neolithic (and current) populations in the Iberian Peninsula, suggesting some population replacement between the Mesolithic and Neolithic.

For the Neolithic, archaeologists have generated a more complex and nuanced picture of the neolithization process in Iberia. This has been possible due to large radiocarbon databases, archaeogenetics, computer simulations, spatial analyses, paleoenvironmental studies, and isotopic studies.³⁴⁰ This evidence shows that the first farming groups settled rapidly along the Mediterranean coast and in the interior along rivers, such as the Ebro, ca. 5,500 cal BCE. In other areas, such as parts of Vasco-Cantabria, the adoption of farming occurred up to two millennia later, suggesting that foragers and farmers coexisted and possibly interacted for a long period of time. The discovery of Neolithic open-air sites complements data previously known from caves and rock-shelters. More systematic studies of fauna, with attention not only to species, but also to animals' size and sex, have expanded our understanding of the animals that people hunted, herded, and gathered, and the relationship between these practices and local ecologies.³⁴¹ Archaeobotanical studies have contributed new insights into the use of plant products and their processing as food during the Iberian Neolithic.³⁴² As a means of recovering microfauna or botanical remains, however, flotation remains a rare practice, particularly at Early Neolithic sites.³⁴³ Shifts have also taken place in archaeological thinking regarding the history of megaliths. While the earliest megalithic

burials date to ca. 4,500 cal BCE, during the Middle Neolithic, it is now recognized that the earliest menhirs were built by 5,400 cal BCE. Thus, monumental architecture in the form of megalith construction is understood as a practice undertaken when foraging groups were adopting farming on the peninsula.³⁴⁴ Unilineal schemes that assume smaller megaliths to be older than larger megaliths have also been dismantled.³⁴⁵

Even if there was a demographic change that accompanied the Early Neolithic of Iberia, which the genetic evidence suggests, it is unclear what social or economic processes were involved that provoked people to adopt animal and plant domesticates and new technologies, such as ceramics. The pushes and pulls of the agrarian lifeway have been a topic of heated debate among archaeologists.³⁴⁶ Traditionally, Iberian archaeologists emphasized the unity of the Neolithic (and the “foreign” package that included new ceramic technologies, etc.) as well as the discontinuities between hunting, gathering, and farming, with migration and acculturation viewed as the main pathways to agriculture. For some, like Bosch-Gimpera,³⁴⁷ the Capsian tradition of North Africa was the source for the Iberian Neolithic. With later investigations that linked Cardial ware from the Mediterranean to material discovered in sites of the Spanish Levante, such as Cova de l’Or,³⁴⁸ the African “myth” collapsed. What followed was the dual theory proposed by Jordá Cerdá and Alcácer Grau³⁴⁹ and later developed by Fortea Pérez³⁵⁰ and Martí Oliver.³⁵¹ Proponents of this theory envisioned two distinctive population groups for Iberia. One was a “pure Neolithic” group (made up of “outsiders”), as represented at Cova de l’Or, Sarsa, and Cendres, who used pottery, and animal and plant domesticates. The second was a local Epipaleolithic indigenous group, who continued with their geometric lithics, such as at Cueva de la Cocina. Complicating and challenging this dual theory was the recovery of domesticated ovicaprids from Epipaleolithic contexts at Cova Fosca dated to the seventh millennium cal BCE. Furthermore, in Andalusia, Cardial ceramics do not dominate, in contrast to the Levante. Ceramics include non-Cardial impressed ware, ceramics decorated in relief, and *almagra* ware. Increasingly, scholars have emphasized the agency of indigenous hunter-gatherers. For example, Lewthwaite, in his “island filter model,” suggested that, as groups adopted agriculture along the Mediterranean, from east to west, they took on what they wanted of the farming “package” and abandoned other practices.³⁵² Even though this model cannot be supported and current evidence points to demographic factors that accompanied the Mesolithic–Neolithic transition, archaeologists argue that we have not been attentive enough to the structural changes and agency of different groups during this historical transformation that would have generated different “Neolithics.”³⁵³ Indeed, there is wide variability in ceramic design and manufacturing technologies – including for Cardial ceramics – with some traits widely shared and others more locally produced, which may be the

outcome of different social needs.³⁵⁴ In response to the passive role traditionally assigned to hunter-gatherers, Vicent proposed a capillary diffusion model,³⁵⁵ in which the adoption of agriculture was linked to the social dynamics of hunter-gatherers.

Megaliths and their associated material culture have traditionally dominated the archaeological literature of the Middle Neolithic. This is in part because the Iberian Peninsula has one of the largest concentrations of megaliths in all of Europe. There are an estimated 8,000 megaliths known in Portugal and Spain.³⁵⁶ Furthermore, the earliest megaliths – menhirs – date to the sixth millennium cal BCE, which are roughly contemporary with the oldest ones in Brittany and Europe as a whole. Megaliths are found in distinctive concentrations – in the northwest, southwest, and south. Given their visibility and abundance, prehistorians were attracted to their study long before the development of modern archaeological methods. This means that much is known about their location and associated artifacts, but much less about the spatial organization of these artifacts and the human remains found with them.

Early work focused on documenting and classifying megaliths and ordering them chronologically. Luis Siret,³⁵⁷ for example, published meticulous drawings of the tombs known at the time, including dolmens, rock cut tombs, and vaulted chamber tombs (*tholoi*). Others, such as Cartailhac, Åberg, and Bosch-Gimpera,³⁵⁸ proposed evolutionary schema to order megalithic structures chronologically, with menhirs and simple chambered tombs thought to predate larger and more complex tombs. The foundational investigations of Georg and Vera Leisner provided a wealth of information for archaeologists to draw from, as they mapped and inventoried thousands of Iberian megaliths and their material culture.³⁵⁹ One unfortunate result of these notable efforts, however, was the impression that megalithic landscapes were exclusively landscapes of the dead. The living were nowhere to be found.

This emphasis on the dead has shifted, and investigations are increasingly devoted to the living sites of the megalith-builders, the landscapes in which they lived, and the lifeways of people. However, a major challenge in carrying out bioarchaeological studies of individuals buried in megaliths is that many of these tombs are found in regions with acidic soils, such as Alentejo and Galicia, so bones do not preserve well. Recent research has also been dedicated to generate more precise knowledge of the building and use chronology of megaliths, which demonstrate their long biographies and architectural transformations that often transcend traditional cultural historical divisions. Spatial analysis of the materials found within the tombs,³⁶⁰ as well as the tombs' possible relationship to transhumance routes³⁶¹ and astronomical features, have been undertaken.³⁶² The study of megalithic art has also emerged as a vibrant field, contributing new insights into the creative worlds of megalith-builders but also more precise dating of their histories through the direct dating of pigments.³⁶³

ENDNOTES

- 1 Burjachs 1994; Jalut *et al.* 2000; Muñoz Sobrino *et al.* 2004; Fletcher *et al.* 2007; López-Merino *et al.* 2010.
- 2 Carrión *et al.* 2010.
- 3 Salgueiro *et al.* 2014.
- 4 Figueiral and Carcaillet 2005; Alcolea *et al.* 2017.
- 5 Carrión *et al.* 2010.
- 6 Delgado *et al.* 2012.
- 7 Boski *et al.* 2002.
- 8 Chabaud *et al.* 2014.
- 9 Sánchez Goñi and Hannon 1999; Leira and Santos 2002.
- 10 Barber *et al.* 1999.
- 11 Pérez-Obiol *et al.* 2011.
- 12 Fortea Pérez 1973; Straus 1996b; Aura Tortosa *et al.* 1998, 2002, 2009.
- 13 Jordá *et al.* 2011; Aura Tortosa *et al.* 2013.
- 14 Aura Tortosa *et al.* 2006, 2015.
- 15 Aparicio 2008, 2014; Gibaja Bao *et al.* 2015.
- 16 García Guix *et al.* 2006.
- 17 Gibaja *et al.* 2015.
- 18 Fernández-López 2016:103.
- 19 García Atiénzar and Jover Maestre 2011; García-Puchol and Salazar-García 2017.
- 20 Mestres 1981.
- 21 Bernabeu Aubán *et al.* 2003.
- 22 Soler Díaz 2012:251–254.
- 23 Góngora y Martínez 1868.
- 24 Bosch-Gimpera 1955
- 25 Jordá 1986.
- 26 Carrasco Rus and Pachón Romero 2013.
- 27 Pellicer Catalán 1964.
- 28 Navarrete Enciso 1976.
- 29 Martí Oliver *et al.* 2009.
- 30 Juan-Cabanilles and Martí Oliver 2017. Given, however, the uneven history of Mesolithic research and different visibility of sites, one should be cautious about presuming that an absence of evidence signifies evidence of absence.
- 31 Badal *et al.* 1994.
- 32 Pericot 1945.
- 33 Fortea Pérez 1971, 1975.
- 34 García-Puchol *et al.* 2018b.
- 35 García-Puchol and Aura Tortosa 2006.
- 36 Bernabeu Aubán 1989, 1999.
- 37 Bosch-Gimpera 1932.

- 38 See Gilman 1974.
- 39 McClure *et al.* 2006a; Bernabeu Aubán *et al.* 2011a, 2011b, 2017a.
- 40 Cruz 2012.
- 41 Harrison and Orozco-Köhler 2001; Gibaja Bao 2002.
- 42 Góngora y Martínez 1868.
- 43 Alfaro Giner 1980; Cacho Quesada *et al.* 1996.
- 44 This cave is not to be confused with another Neolithic cave site, also known as Cueva de los Murciélagos, but in Zuheros, Córdoba, where important studies of the botanical remains were conducted (Hopf 1974; González Urquijo *et al.* 1994; González Urquijo *et al.* 2000).
- 45 Martínez-Sevilla 2016.
- 46 Martínez-Sevilla 2016:374–375.
- 47 Goñi Quinteiro *et al.* 1999; Cámalich Massieu and Martín Socas 2013; Martínez-Sevilla 2016:365–375.
- 48 Martínez-Sevilla 2016.
- 49 Bosch *et al.* 2000, 2011; Tarrús i Galter 2008.
- 50 Antolín *et al.* 2014.
- 51 Antolín *et al.* 2018.
- 52 Oms *et al.* 2016:299–300.
- 53 Gibaja Bao *et al.* 2012.
- 54 Fontanals-Coll *et al.* 2015; Gibaja Bao *et al.* 2017.
- 55 Gibaja Bao *et al.* 2014; Terradas *et al.* 2014.
- 56 Gibaja Bao and Terradas 2012.
- 57 Vaquer *et al.* 2012.
- 58 Gibaja Bao *et al.* 2017.
- 59 Bosch Argilagós and Estrada Martín 1994; Bosch and Borrell 2009; Borrell *et al.* 2015.
- 60 Odriozola *et al.* 2016. Variscite mining from the Middle Neolithic has also been documented at Palazuelo de las Cuevas, in northern Meseta (Villalobos García and Odriozola 2016).
- 61 Weller *et al.* 2007.
- 62 Martín *et al.* 2007.
- 63 Blasco *et al.* 2008.
- 64 Edo *et al.* 2011; Amparo Núñez *et al.* 2013.
- 65 Antolín and Buxó 2011.
- 66 Edo *et al.* 2017.
- 67 Zilhão 2004.
- 68 Arias Cabal *et al.* 2009a.
- 69 Corchón Rodríguez 2009.
- 70 Barrio and Rubio 2002.
- 71 Cerrillo Cuenca 1999.
- 72 Jiménez-Guijarro 2010.
- 73 Rojo-Guerra *et al.* 2012b.

- 74 Alonso Fernández and Jiménez Echevarría 2014.
- 75 Consuegra *et al.* 2004; Díaz-del-Río *et al.* 2006; Consuegra *et al.* 2018.
- 76 Bueno Ramírez *et al.* 2002, 2005a.
- 77 Rojo-Guerra *et al.* 2015.
- 78 Rojo-Guerra 1999, Rojo-Guerra and Kunst 1999, 2002; Görsdorf 2000; Rojo-Guerra *et al.* 2010.
- 79 Delibes de Castro *et al.* 1986; Delibes de Castro and Etxeberria Gabilondo 2002.
- 80 Stika 2005.
- 81 Díaz-del-Río *et al.* 2011.
- 82 Straus 2015b.
- 83 Piette 1895.
- 84 Straus 2015b, 2018b.
- 85 Replicative and statistically analyzed morphological studies were conducted of the six engraved bones from the cave of Arenaza I in order to determine the number of authors involved in their production (Apellániz *et al.* 2002).
- 86 Straus 1992:214.
- 87 Altuna Etxabe 1984.
- 88 González Morales and Straus 2012; Straus and González Morales 2012, 2014.
- 89 Carballo 1960; González Echegaray 1980.
- 90 Fernández-Tresguerres 1980; Fernández-Tresguerres and Rodríguez Fernández 1990.
- 91 Straus and Clark 1986.
- 92 Adán Álvarez *et al.* 2005.
- 93 Straus 1992:216.
- 94 Thompson 1955; Fernández-Tresguerres 1990.
- 95 Piette 1896.
- 96 Straus 1992:206.
- 97 Fernández-Tresguerres 2004.
- 98 Thompson 1955; Fernández-Tresguerres and Rodríguez Fernández 1990.
- 99 Bahn and Couraud 1984.
- 100 Couraud 1985.
- 101 d’Errico 1992.
- 102 Straus 1992:195.
- 103 Ortea 1986.
- 104 Gutiérrez Zugasti 2011a.
- 105 Fernández-Tresguerres 1976, 1980; Garralda 1986; Arias Cabal *et al.* 2009b; Arias Cabal 2010:84.
- 106 Fano Martínez 2018.
- 107 Vega del Sella 1914, 1923; de la Rasilla 1991; Fano Martínez 2006:173.
- 108 Obermaier 1916:349–358; Fano Martínez 2006.
- 109 Straus and Clark 1986.
- 110 Ters 1973; González Morales *et al.* 2004; Fano Martínez *et al.* 2013.

- 111 Arias Cabal et al. 2015b.
- 112 Fano Martínez 2018:10.
- 113 Fano Martínez 2018:9.
- 114 Rigaud and Gutiérrez-Zugasti 2016.
- 115 González Morales 1982; Clark 1983:44; Straus 1992:220.
- 116 Fano Martínez 2018.
- 117 Gutiérrez Zugasti 2011b.
- 118 Arias Cabal et al. 2009b.
- 119 Arias Cabal et al. 2009b.
- 120 Arias Cabal and Garralda 1996; Arias Cabal et al. 2009b.
- 121 Aura Tortosa et al. 1998.
- 122 Iriarte Chiapusso et al. 2010a.
- 123 Arias Cabal 2005–2006.
- 124 Arias Cabal 1991; López-Merino et al. 2010; Fano et al. 2015; Fernández-Eraso et al. 2015; Cubas et al. 2016; Zapata Peña 2016.
- 125 Cubas et al. 2016:98.
- 126 This technique was first described for Late Bronze Age pottery and named after the Late Bronze Age site of Boquique; however, the technique is actually found on ceramics from diverse time periods (Alday-Ruiz 2009).
- 127 Alday-Ruiz and Mujika 1999; Iriarte et al. 2005.
- 128 Iriarte 2009; Zapata Peña 2016.
- 129 Zapata Peña 2016:192–193.
- 130 Fernández-Eraso 2011:126–128.
- 131 Peña-Chocarro et al. 2005.
- 132 López-Merino et al. 2010.
- 133 Zapata Peña et al. 2004.
- 134 Fano et al. 2015.
- 135 Arias Cabal 1991, 2007:58.
- 136 The term “Helwan” is probably best not used for the Iberian lithics, as this retouch forms a symmetrical single ridge along the backed edge of a microlith. Although some Iberian tools designated as Helwan do have this retouch, others have a unifacial alternative retouch or abrupt backing (John Shea, personal communication, 2017).
- 137 Fernández-Eraso et al. 2015.
- 138 Peña-Chocarro et al. 2005; García-Gazólaz and Sesma 2007.
- 139 Scarre et al. 2003.
- 140 Fernández-Eraso and Mujika-Alustiza 2013.
- 141 de Blas Cortina 2006.
- 142 Arias Cabal 2012; Cubas et al. 2016.
- 143 Cubas et al. 2016.
- 144 Laborde et al. 1967; Arias Cabal 2012.
- 145 Calafell and Bertranpetit 1994; Bertranpetit et al. 1995.
- 146 Günther et al. 2015.

- 147 Zilhão 2000b.
- 148 Dias *et al.* 2016.
- 149 Araújo 2003, 2016a.
- 150 Bicho 1994.
- 151 Villar Quinteiro 1997, 2007.
- 152 Vázquez Varela 2004.
- 153 Bicho 1994.
- 154 Araújo 2003, 2009, 2016a.
- 155 Araújo 2003:107.
- 156 Araújo 2011; Araújo *et al.* 2014.
- 157 Bicho 2000; Araújo 2016a.
- 158 Aubry *et al.* 2005.
- 159 Aubry *et al.* 1997.
- 160 Hockett and Bicho 2000; Bicho and Haws 2008.
- 161 Straus 2008.
- 162 Raposo and Penalva 1987; Raposo 1994.
- 163 Bicho 2007.
- 164 Araújo and Almeida 2013.
- 165 Igreja 2013.
- 166 Peyroteo Sijerna 2016a.
- 167 Bicho *et al.* 2010.
- 168 Araújo 2003:III.
- 169 Roche 1972, 1989.
- 170 Rolão 1999.
- 171 Soares and Tavares da Silva 2018.
- 172 Zilhão 2003a; Fernández-López de Pablo and Gómez Puche 2009; Bicho *et al.* 2010; Fernández-López de Pablo and Jochim 2010.
- 173 Zilhão 2003a; Bicho *et al.* 2010. Shell middens (although much smaller in size) are known in Portugal as early as from the Middle Paleolithic. One example is the cave of Figueira Brava, dated to 32,300 cal BCE.
- 174 Araújo 2016b.
- 175 Roche 1975.
- 176 Pereira da Costa 1865; Ribeiro 1884; Cardoso and Rolão 1999/2000; Cardoso 2013.
- 177 Petersen 2015.
- 178 Aldeias and Bicho 2016.
- 179 Bicho *et al.* 2015b.
- 180 Figueiral and Carvalho 2006; Carvalho *et al.* 2010.
- 181 Straus *et al.* 1990; Straus 1991.
- 182 Sousa *et al.* 2016.
- 183 Lubell *et al.* 1994.
- 184 Jackes and Meiklejohn 2008.
- 185 Guiry *et al.* 2016.

- 186 Detry and Cardoso 2010.
- 187 Arias Cabal *et al.* 2015a.
- 188 Peyroteo Stjerna 2016b.
- 189 Peyroteo Stjerna 2016b:453.
- 190 Tavares da Silva and Soares 1981; Soares and Tavares da Silva 2003.
- 191 Simões 1999.
- 192 Gomes 2012.
- 193 Zilhão 1992b.
- 194 de Jesus Sanches 1997.
- 195 Carvalho *et al.* 2017.
- 196 Gomes 2012.
- 197 Zilhão 2009.
- 198 Zilhão 2009.
- 199 Cardoso *et al.* 1998.
- 200 Carvalho 2008:38.
- 201 Vis *et al.* 2008; Lord *et al.* 2011.
- 202 Angelucci *et al.* 2007.
- 203 Soares and Tavares da Silva 2003.
- 204 Carvalho 2008.
- 205 Zilhão 2001b.
- 206 Linstädter 2008.
- 207 Cortés Sánchez *et al.* 2012; Fregel *et al.* 2018. Gilman (1975:131) argued, however, that “the (Early Neolithic) ceramic industries in northern Morocco, in Oran, in Andalusia, in the Spanish Levant, and in Catalonia are as different stylistically as they are similar technically.”
- 208 Zilhão 2000b.
- 209 Jackes *et al.* 1997.
- 210 Oosterbeek 2003.
- 211 Cortés Sánchez *et al.* 2012.
- 212 Dean 2010.
- 213 Dean *et al.* 2012.
- 214 Stiner *et al.* 2003.
- 215 Ramil Rego and Aira Rodríguez 1993; de Jesus Sanches 1997; Carvalho 2003.
- 216 López-Dóriga and Simões 2015.
- 217 Carvalho *et al.* 2013.
- 218 Soares *et al.* 2016.
- 219 Diniz 2001.
- 220 Although see Carvalho 2008; Valente and Carvalho 2014, Davis and Simões 2016.
- 221 Gomes 2012.
- 222 Tavares da Silva and Soares 1983; Soares and Tavares da Silva 2000.
- 223 Scarre *et al.* 2003.

- 224 Calado 2004; Calado and Rocha 2008.
- 225 Monteagudo 2003.
- 226 Monteiro and Gomes 1981; Cardoso 2002:228.
- 227 Gomes 1979.
- 228 Calado 2004, vol. 2:23, 2015.
- 229 Cardoso *et al.* 1995.
- 230 Bloch and Parry 1982.
- 231 Calado and Rocha 2008.
- 232 Gomes 1997a.
- 233 Gomes 1986.
- 234 Rocha and Calado 2006.
- 235 Cardoso *et al.* 1997.
- 236 Gomes 1997a.
- 237 Pimenta and Tirapicos 2008.
- 238 Gomes 1997a.
- 239 Pina 1971.
- 240 Alegria and Dias 2007.
- 241 Alegria and Dias 2007.
- 242 www.patrimoniocultural.gov.pt/pt/patrimonio/patrimonio-imovel/pesquisa-do-patrimonio/classificado-ou-em-vias-de-classificacao/geral/view/69690.
- 243 According to Mário Varela Gomes (personal communication, 2018), the Early Neolithic date for the cromeleque was based on sherds of impressed ware found at the site.
- 244 Oliveira 2016a.
- 245 Gomes 1994a.
- 246 Estácio da Veiga 1886; Gomes 1997b.
- 247 Ferreira 1864, 1875; Monteiro and Gomes 1981.
- 248 Monteiro and Gomes 1981; Gomes 1994a; Gomes, personal communication, 2017.
- 249 Soares and Tavares da Silva 2003.
- 250 Jorge 1997.
- 251 Calado *et al.* 2010:7.
- 252 Calado 2015.
- 253 Steelman *et al.* 2005.
- 254 Calado 2000.
- 255 Beta 416341:5,420 ± 30 BP (Oliveira 2016b).
- 256 Tavares da Silva and Soares 2018.
- 257 Nunes and Carvalho 2013.
- 258 Carvalho 2014:210–211.
- 259 Carvalho 2014:161
- 260 Valente and Carvalho 2014.
- 261 Leisner and Leisner 1951.
- 262 Lubell *et al.* 1994.

- 263 Oosterbeek 1994.
- 264 Cardoso and Carvalho 2008.
- 265 Duarte and Arnaud 1996; Carvalho 2014; Carvalho *et al.* 2016.
- 266 Carvalho 2014:309.
- 267 Carvalho *et al.* 2016.
- 268 Carvalho and Rocha 2016.
- 269 Criado Boado and Fábregas Valcarce 1989.
- 270 Scarre *et al.* 2003:80.
- 271 López-Romero 2013.
- 272 Leisner 1938.
- 273 Armada 2009.
- 274 López Cuevillas 1959.
- 275 Alonso Matthías and Bello Diéguez 1997.
- 276 After Galician Romantic poet Eduardo Pondal (1835–1917) wrote the poem *O Dolmen de Dombate*, the site (known at the time as Fornela de Vilaseco), became more widely known and entangled with Galician national identity.
- 277 Alonso Matthías and Bello Diéguez 1995.
- 278 Jorge 1980.
- 279 Senna-Martínez and Ventura 2008:324.
- 280 Senna-Martínez 1989; Senna-Martínez and Valera 1989.
- 281 Mañana Borrazás 2005.
- 282 Steelman *et al.* 2005.
- 283 Nash and Garcês 2017.
- 284 Leisner and Leisner 1951, 1955, 1956, 1959; Leisner 1965, 1998.
- 285 Whittle and Arnaud 1975.
- 286 Leisner and Leisner 1951:212–220.
- 287 Leisner and Leisner 1951:308–309.
- 288 Boaventura 2009; Boaventura and Mataloto 2013.
- 289 Cruz Berrocal 2004, 2005; Fairén 2004, 2011, 2015; Martínez Valle 2005; Cruz and Vicent 2007; McClure *et al.* 2008; Hernández Pérez 2012; Domingo 2016.
- 290 For some decades, prehistorians, such as Fortea (1974) and Beltrán (2001), described a fourth tradition – the Linear Geometric style. This was characterized by a limited set of motifs, such as red painted lines, zigzags, and herringbone patterns, with no figurative designs. It had been considered to be an Epipaleolithic tradition, whose imagery derived from that found on the Cueva de la Cocina plaquettes of the Upper Paleolithic (see [previous chapter](#)). However, the “independence” of this art style has been questioned, owing to the technical diversity in which it was produced (Alonso and Grimal 1994) and its ambiguous superpositions and relationship with Levantine and Macroschematic art. Many scholars now subsume this style into the Schematic tradition (Cruz 2004:158–166).
- 291 Hernández Pérez and Centre d’Estudis Contestans 1982.

- 292 Martí Oliver and Hernández 1988; Cruz Berrocal and Vicent Garcia 2007.
- 293 Martí Oliver and Hernández 1988; Cruz Berrocal 2004:166, figs. 7–8; Fairén-Jiménez 2004; Hernández Pérez 2012:149.
- 294 Góngora y Martínez 1868:70.
- 295 Breuil 1933/1935; Acosta Martínez 1984.
- 296 Breuil 1935.
- 297 For general works, see Beltrán 1968; Walker 1971; Martí Oliver and Hernández 1988; Alonso Tejada and Grimal 1994; Hernández Herrero 1999; Cruz Berrocal 2004; Domingo Sanz 2016.
- 298 Díaz-Andreu García and García Benito 2015; López-Montalvo 2015.
- 299 Martínez Valle 2000.
- 300 Viñas *et al.* 2012a.
- 301 Díaz-Andreu García *et al.* 2015.
- 302 Marconell 1892; Manuel Bea, personal communication, 2018.
- 303 Almagro Basch 1949:91.
- 304 Cartailhac 1902.
- 305 Vidiella 1907.
- 306 Rocafort 1908.
- 307 Breuil and Cabré Aguiló 1909.
- 308 Cabré Aguiló 1915. For a detailed analysis of the history of Levantine rock art research and the institutional and political issues related to its study and interpretation, see Díaz-Andreu García 2012a.
- 309 Obermaier and Wernert 1919:94–96.
- 310 Hernández Pacheco 1918, 1924.
- 311 Almagro Basch 1947.
- 312 Alonso Tejada and Grimal 1994; Mateo Saura 2005, 2008, 2009; Viñas *et al.* 2012b, 2016.
- 313 Ruiz López *et al.* 2006.
- 314 Ruiz López *et al.* 2009.
- 315 Viñas *et al.* 2016.
- 316 Ruiz *et al.* 2012.
- 317 Domingo Sanz 2008, 2015; Fernández-López de Pablo 2014.
- 318 Domingo Sanz 2016.
- 319 Martí Oliver and Hernández 1988.
- 320 Díaz-Andreu García 1998b.
- 321 Marqués de Cerralbo in Cabré Aguiló 1915:viii, cited in Díaz-Andreu García 1998b:39.
- 322 For bibliometric studies of Levantine and post-Paleolithic art in general, see Cruz Berrocal *et al.* 1999 and Mateo Saura *et al.* 2015. These works show that the majority of authors worked locally, published individually, and were not affiliated with academic or administrative institutions.
- 323 López-Montalvo 2015.
- 324 Bea 2017.

- 325 Escoriza Mateu 2002.
- 326 Skeates 2010; Hamilakis 2014.
- 327 Cruz Berrocal 2004.
- 328 Díaz-Andreu García and García Benito 2012, 2015.
- 329 Díaz-Andreu García *et al.* 2017.
- 330 Fairén-Jiménez 2007, 2011.
- 331 Cruz Berrocal (2004), however, did not find a correlation between visibility and Levantine paintings.
- 332 Domingo Sanz 2016.
- 333 Cruz Berrocal and Vicent Garcia 2007.
- 334 Cruz Berrocal 2004.
- 335 Hernanz *et al.* 2010; López-Montalvo *et al.* 2017.
- 336 Vicent Garcia *et al.* 1996; Montero Ruiz *et al.* 1998; Domingo Sanz *et al.* 2013; Rogerio-Candelera 2015; del Hoyo-Meléndez *et al.* 2015; www.euopreart.net/preart.htm.
- 337 Savory 1968.
- 338 Utrilla Miranda and Montes Ramírez 2009.
- 339 Sánchez-Quinto *et al.* 2012.
- 340 Arias Cabal 1999, 2007; Zilhão 2001b; Manen *et al.* 2007; Fernández-López de Pablo and Gómez Puche 2009; McClure *et al.* 2009; Díaz-del-Río 2010; Alday-Ruiz 2012; Cruz Berrocal 2012; Rojo-Guerra *et al.* 2012a; Isern *et al.* 2014; Fano *et al.* 2015; Pardo Gordó *et al.* 2015; Bernabeu Aubán *et al.* 2016; Cubas *et al.* 2016; Drake *et al.* 2017; Carvalho 2018; García-Martínez de Lagrán 2018; García Puchol *et al.* 2018a.
- 341 Navas *et al.* 2008; Valente and Carvalho 2014.
- 342 Peña-Chocarro 2007; Pérez Jordà *et al.* 2011.
- 343 Carvalho *et al.* 2013:42.
- 344 Bueno Ramírez *et al.* 2007.
- 345 Bueno Ramírez 1994; Bueno Ramírez *et al.* 2004, 2016.
- 346 Price and Bar-Yosef 2011.
- 347 Bosch-Gimpera 1932.
- 348 Schubart and Pascual 1966.
- 349 Jordá Cerdá and Alcácer Grau 1949.
- 350 Fortea Pérez 1971.
- 351 Martí Oliver 1977; Vicent García 1997.
- 352 Lewthwaite 1986.
- 353 Díaz-del-Río 2010.
- 354 Bernabeu Aubán *et al.* 2017a.
- 355 Vicent García 1997.
- 356 For southern Portugal and Spanish Extremadura: 2,000; in the Interior: 400; Galicia: 4,000; northern Portugal: 500; Catalonia: 400; Andalucía: 400–500; Bueno, personal communication, 2018.
- 357 Siret 1893.

- 358 Cartailhac 1886; Åberg 1921; Bosch-Gimpera 1932.
359 Leisner 1938; Leisner and Leisner 1943, 1951, 1955, 1956, 1959; Márquez
et al. 1952; Leisner 1965, 1998.
360 Figueiredo 2011.
361 Chapman 1979; Wheatley et al. 2010.
362 Hoskin et al. 1994; Senna-Martínez et al. 1997; Hoskin 2001.
363 Steelman et al. 2005; Carrera and Fábregas 2006; Bueno Ramírez et al.
2007.

CHAPTER 5

THE EXPANSION OF INTERREGIONAL CONTACTS: THE LATE NEOLITHIC AND EARLY COPPER AGE (3,500–2,500 BCE)

INTRODUCTION

Between the late fourth and early third millennia BCE, labor was mobilized in new ways to construct increasingly monumental spaces for the living and the dead and to craft extraordinary objects, some of which traveled far across the peninsula. New settlements were founded on hilltops, with thick walls and bastions. On lowland plains of central and southern Iberia, massive ditched enclosures were constructed. Trade networks expanded, and goods flowed between different regions, across the Strait of Gibraltar, and over the Pyrenees. These goods shaped the identities of those who mined them, who transformed them into valued adornments, tools, and weapons, who traded them, and who possessed them. These objects were made from ivory, amphibolite, variscite, cinnabar, copper, and gold. Enabling these labor-intensive endeavors was a stable agropastoral economy. In cultural historical terms, this millennium spans the Late/final Neolithic and the Early Copper Age/pre-Beaker period (Figure 5.1).¹

HISTORIES

The North and Northwest

The mountainous region of northern and northwest Iberia was long viewed as a kind of backwater, occupied by small transhumant groups and a passive recipient of influences from more complex societies further to the south.² The spread of the more precocious megalith-builders from the Alentejo were thought responsible for the construction of megaliths in the region.³ Little was known about settlements or subsistence economies. In his 1959 survey of the megaliths of northwest Iberia, López Cuevillas could only dedicate a few pages to settlements, because “in the Spanish Northwest, no Neo-Eneolithic settlement has yet been provided like the Portuguese sites of Obidos, Rotura, Pavia, Pragança, Chibannes and Vilanova de San Pedro, or those of Almeria,

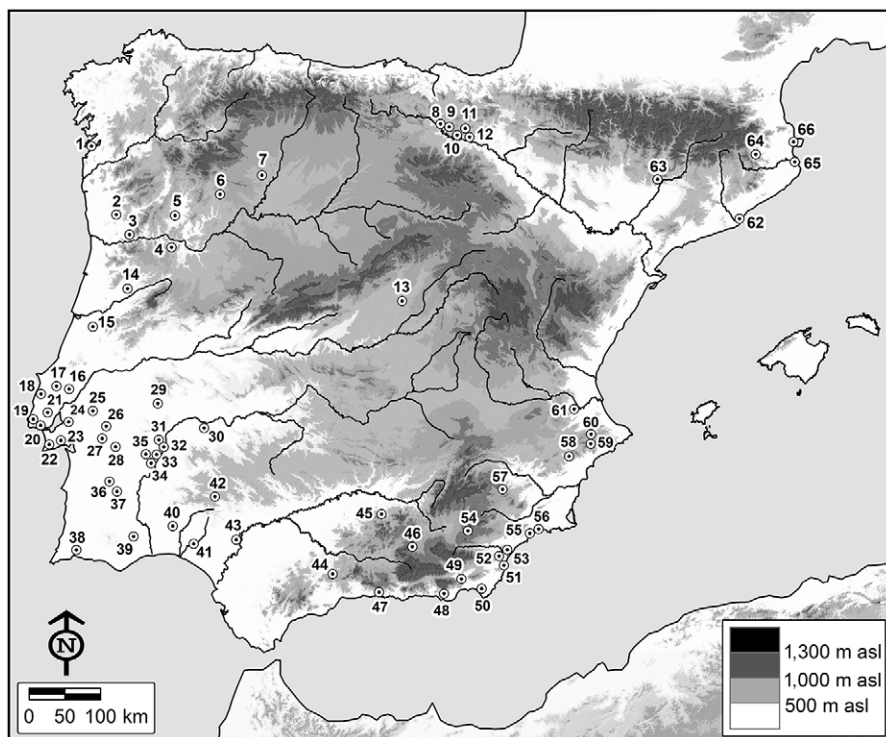


Figure 5.1 Late Neolithic through Early Copper Age sites discussed in the text (key sites). 1. Monte de Os Remedios and Lavapés; 2. Monte da Peña; 3. Outeiro de Ante; 4. Castanheiro do Vento and Castelo Velho de Freixo do Numão; 5. Buraco da Pala; 6. El Pedroso; 7. Las Peñas de Quiruelas; 8. La Renke Norte; 9. Las Yurdinas and Alto de la Huesera; 10. San Juan ante Portam Latinam; 11. La Peña de Marañón; 12. Longar; 13. Camino de las Yeseras; 14. Anta Arquinha da Moura; 15. Pombal; 16. Vila Nova de São Pedro; 17. Pragança; 18. Zambujal and Bolores; 19. Belas; 20. Leceia; 21. Trigaches and Carcavelos; 22. Lapa do Bugio; 23. Quinta do Anjo and Rotura; 24. Monte da Quinta 2; 25. Cabeço do Pé da Erra; 26. Anta Grande do Zambujeiro and Comenda 2; 27. Escoural; 28. Vale de Rodrigo; 29. Rabuje; 30. La Pijotilla; 31. Águas Frias; 32. San Blas; 33. Olival da Pega 2; 34. Farisoa; 35. Perdigões; 36. Porto Torrão; 37. Bela Vista 5; 38. Alcalar; 39. Castelo de Santa Justa; 40. Cabezo Juré; 41. Dolmen de Soto; 42. Pico Centeno; 43. Valencina de la Concepción; 44. Antequera; 45. Marroquies Bajos; 46. Panoría; 47. Nerja; 48. Ciavieja; 49. Los Millares; 50. El Barranquete; 51. Las Pilas and Cuartillas; 52. El Argar and El Gárcel; 53. Almizaraque, Tres Cabezos and Campos; 54. El Malagón; 55. Parazuelos; 56. Cabezo de la Cueva del Plomo; 57. Camino del Molino; 58. La Torreña-El Monastil; 59. Cova de la Pastora; 60. Niuert and Les Jovades; 61. Ereta del Pedregal; 62. La Sagra; 63. Cova Gran de Santa Linya; 64. La Prunera; 65. Cau d'en Calvet and Cau del Tossal Gros; 66. Ca n'Isach.

Map: Antonio Blanco-González

such as Tres Cabezos, El Gárcel, Los Millares and Almizaraque,” although some open-air sites and unfortified hilltop settlements (such as Penha) were known.⁴

In recent decades, this picture changed in significant ways – the result of regional survey and excavation programs, large-scale areal excavations (often associated with mitigation efforts), the creation of absolute chronologies, and integration of information from burials, settlements, paleoeconomic evidence, and rock art sites using a landscape approach.⁵ The picture now emerging is of a heterogeneous cultural landscape of farmers and herders who, while distinctive in the material culture they produced, were connected to communities to the south and east, and along the Atlantic, through exchange and other mobility practices.⁶ New evidence for agricultural practices has also challenged the traditional view that only transhumant groups lived in the region. The discovery and analysis of sites in a variety of landscapes and employing different architectures, including walled hilltop occupations on granitic outcrops, ditched enclosures, pit sites, lowland homesteads, and rock-shelters, have generated a far more complex and textured view.

Ceramics associated with the groups living in north and northwest Iberia were handmade bowls and globular-closed vessels decorated with combed incisions and impressions. A number of subregional styles can be discerned, which likely reflect some social isolation structured by the mountainous landscape. The most diagnostic of these styles is Penha ware. Found in the western zone of the region, it was first described by Mário Cardoso (1889–1982) based on the ceramics found at the hilltop settlement of Monte da Penha.⁷ Penha ware is characterized by handmade ceramics decorated with deeply incised geometric motifs placed within metopes (*cerâmicas incisas metopadas*). However, they are variable in manufacture, fabric, and function. This was revealed from research at Lavapés, another settlement where Penha ware makes up a large proportion of the ceramic assemblage. The site, excavated in the 1980s, was radiocarbon-dated to the mid-third millennium cal BCE.⁸ While the majority of the decorated ceramics are Penha ware, 60 percent are undecorated. The Penha sherds derive primarily from small- and medium-sized vessels that could have stored between 0.5 and 2.0 liters. There are only a few large vessels that might have been used for storage; one, for example, has been reconstructed to hold 18 liters. Given the predominance of nonstorage vessels, the settlement may have been a node in a larger network of specialized sites.

Flaked lithics (such as concave arrowheads) were made from flint and quartz. The earliest copper metallurgy (using arsenical copper) appears at this time, with evidence suggesting it was influenced by practices derived from southern/central Iberia rather than a local invention.⁹

Mobility has been the focus of much recent research, with ceramics often used as a way to assess the nature and degree of mobility and regional

integration. Prieto Martínez and Lantes Suárez compared the sources of Late Neolithic ceramics from settlements and burials in Galicia with those from other prehistoric sites.¹⁰ Unlike many studies, they avoided strict binaries in their classification of ceramic sources (i.e., between local and nonlocal), and used clearly defined terms, such as *in situ* (0–1 km), local (1–7 km), district (7–50 km), regional (50–200 km), and foreign (more than 200 km), although one could critique the equivalence presumed between geographic distance and social distance implied by some of these terms. They found that, for the Late Neolithic, both undecorated and Penha ceramics circulated over fairly large distances (7–50 km). Jorge *et al.* analyzed ceramics from three Late Neolithic sites (one burial and two domestic sites) in the Mondego (Ameal, Fiais, and Murganho 2).¹¹ Their study revealed the long-distance circulation (exceeding 10 km) of undecorated ceramics, which are commonly assumed to be “local” goods.

In the northwest, walled enclosures include Castanheiro do Vento,¹² Castelo Velho de Freixo do Numão,¹³ Crasto de Palheiros,¹⁴ Castro de Santiago, and Fraga de Pena.¹⁵ Some of these sites were occupied or used over long periods of time, although with episodic periods of abandonment. Some archaeologists viewed these sites as fortified settlements, while others see them as monumentalized hills, emphasizing the richness of ritual practices found at them.

One site viewed as such a monumentalized hill is Castelo Velho, located on a 681 m-high rocky/granitic spur (Figure 5.2). In the early third millennium cal BCE, a circular stone and clay enclosure with platform and ramps was constructed on the hill, and in the latter half of the millennium, the platform



Figure 5.2 Castelo Velho.

Courtesy: Susana Lopes

and ramps were reinforced. This phase was marked by *cerâmica penteada* (combed-ware ceramics), *cerâmica oculada* (eyed), and cord-impressed ware. Metal objects are rare. Also dated to this first phase were human bones, carbonized seeds, loom weights, and ceramics placed in sealed contexts, which together appear to be the material traces of ritual practices. Between the third and second millennium cal BCE until ca. 1,300 cal BCE, the site underwent changes in its use, although its function remains unclear. This long phase was associated with Cogeces (proto-Cogotas) pottery, a type of ceramic decorated with incised or impressed *espinhas* (fish ribs/spines) horizontally arranged around the edge of the pot, sometimes on both the inside and outside.¹⁶ This pottery is commonly found at sites to the east, in the northern Meseta. The lack of clear and distinctive site phases that neatly conform to the “classic” Chalcolithic, Early and Middle Bronze Age periodizations suggests that these cultural phases do not aptly frame the cultural history of this region.

Castanheiro do Vento, like Castelo Velho, is on a prominent elevation, ca. 730 m above sea level, and has a commanding view of the landscape and other ancient sites. It was enclosed by three concentric rings of stone walls with bastions, similar to fortified settlements found to the south, such as Leceia and Zambujal (see section titled “[The Southwest](#)” in this chapter). Radiocarbon dates indicate its use between 2,900 and 1,600 cal BCE, spanning the Chalcolithic and Early Bronze Age. The dating of the enclosure and bastions are not entirely certain, but they are believed to date between 2,500 and 1,900 BCE. The ceramic assemblage is similar to that at Castelo Velho, with comb-decorated ceramics. Also found were granite grinding stones. Polished stone axes and flaked lithics were rare finds. The few identifiable faunal remains in the Chalcolithic level (layer 3) (thirty out of 184) include ovicaprids, *Bos* sp., *Sus* sp., *Oryctolagus cuniculus*, and *Cervus elaphus*; juveniles and subadults predominate.¹⁷ The excavators argue that sites like Castanheiro do Vento and Castelo Velho were likely exceptional places, and that archaeologists know little about the smaller lowland sites. They emphasize the role of these monumental sites as places that provoked and marked memory.

The rock-shelter of Buraco da Pala provided rare information into the economic and ritual lives of groups living in the uplands of northern Iberia between 2,800 and 2,500 cal BCE.¹⁸ At the site, located in the quartzitic outcrop of the Serra dos Passos and overlooking the Tua Valley, hearths and granaries containing nearly 2,000 liters of botanical remains, both wild and domestic, were found carbonized from at least three burning events. The remains in the storage area included barley (*Hordeum vulgare*), wheat (*Triticum aestivum*), fava bean (*Vicia faba*), and acorn (*Quercus*). In a smaller area of the shelter, with the hearths, were found poppy seeds, lentils, peas, and linseed/flax, as well as the other plants also found in the granary. In the granary levels were also recovered gold and variscite beads, a ceramic vessel with ocular imagery (similar to that found on stone idols and the slate plaques in the

southwest), a copper axe, and a ceramic tuyere with traces of copper that suggests that metallurgy took place at the site.¹⁹ The tuyere is one of the few known for this period in the Iberian Peninsula. An experiment was conducted using a similar tuyere to smelt 1 kg of copper ore, and it was found necessary, in order to recover all of the copper, to completely break apart the tuyere. Thus, it is possible that most tuyeres have been destroyed.²⁰ Schematic art was found on three walls of the rock-shelter, which likely date to the same period as the granary and consumption area. The abundance of the stored food, the fact that valuable objects were not removed from the burned layer, and the presence of art suggest that the rock-shelter was used in communal feasting or in practices of conspicuous consumption, perhaps as part of elite competition. Given that the earliest use of the site dates to the fifth millennium cal BCE, it may have developed into a powerful ancestral place over time. Other shelters with painted imagery, some ocular, were found upslope from Buraco da Pala and at sites less than 2 km away at the Núcleo do Regato das Bouças.²¹

In Galicia, settlements were situated in diverse landscapes. Although most are in uplands, with marked visibility over the landscape, groups also established themselves in small homesteads in valley bottoms or on low hills along river valleys. These sites include Requeán,²² Chan da Carrola/San Francisco, and Monte das Minas/Coto do Boubou.²³ As in southern and central Iberia, the identification of ditched enclosures in Galicia has contributed to a picture of a diverse settlement landscape. These sites include Monte de Os Remedios²⁴ and Montenegro.²⁵

Monte de Os Remedios is a large coastal site on the Morrazo Peninsula that extended over 4,300 m² and was occupied between 4,500 and 1,800 cal BCE, from the local Early Neolithic (with Boquique ware), pre-Beaker (with Penha ware) and Beaker periods, and earlier Bronze Age. The longevity of the site is likely the result of local availability of water and good arable soils, its excellent visibility, and its strategic location between the mountains and coast. Its main period of occupation appears to have been the pre-Beaker Chalcolithic. By the mid-fourth millennium cal BCE, it was surrounded by a ditched palisade, within which were wattle-and-daub huts of diverse forms (circular, oval, and quadrangular), large open-air hearths, and numerous storage pits. The population was engaged in farming (as attested by the grinding tools and residues found on ceramics), although forest products were also exploited, such as wood for construction and fuel and acorns for food. A large assemblage of flaked lithics made predominantly of local raw materials, such as quartz, was recovered.²⁶

The settlement picture is less clear along the northern façade. In Cantabria, open-air settlements are rare, and the best evidence comes from caves.²⁷ Nonetheless, open-air settlements are found along the Cantabrian coast (e.g., El Rostrío de Griego and Virgen del Mar) and in the interior uplands (El Castro and Monte Cildá). In the Basque region, pit sites are characteristic,

although caves and rock-shelters were also utilized.²⁸ The best-known is La Renke Norte, where huts dated to the Late Neolithic were found. The site was also occupied during the Beaker period.²⁹ While other pit sites are known, only a few have been excavated. They include Lozcazarra and Paternanbidea, where archaeologists recovered elongated dug-out hearths similar to Polynesian earth ovens that suggest they may have been used in communal feasts. Diagnostic artifacts of the Early Chalcolithic are lithic projectile points with invasive retouch,³⁰ sickle blades, and polished stone tools.³¹

Groups living in north and northwest Iberia engaged in burial rites that involved the inhumation of the dead in collective tombs. Thousands of mortuary sites are known, some of which were used since the Neolithic. The dead were housed in rock-shelters and caves, such as La Garma, pits within settlement sites, megaliths (including passage graves), and small mounds (which are sometimes found over domestic sites).³² Megaliths and mounds are often found as part of clusters.³³ Some tombs, such as Mound 1 of Outeiro de Ante in the Serra da Aboboreira, which was 20 m in diameter, were the outcome of major labor investments. The increasing use of tombs with an open chamber or passage, in contrast to earlier closed tombs, has been interpreted as a consequence of changing ritual practices. These new practices allowed for larger groups of people to participate and observe, but also created differences between those who could enter the tombs and engage in rituals inside and those who watched from the outside.³⁴ Osteological studies have been hampered by the acidic soils. Nonetheless, the preservation of bones at some tombs provides glimpses into ritual practices. For example, some corpses appear to have been smoked while flesh was still on the body, as suggested at Anta Arquinha da Moura.³⁵ The close relationship between tomb location and pathways used by herders and animals suggests that the ancient monuments may have been similarly integrated into ancient mobility and herding practices.

As with tombs, rock art sites and petroglyphs, most often on granite, are also commonly found along transhumant routes.³⁶ Imagery includes dots, cup marks, or more complex circular designs, deer, horses, and humans (Figure 5.3). The similarity between northwest Iberian petroglyphs and those found along the Atlantic coast, such as in Britain, Ireland, and western France, suggests that ancient peoples along the Atlantic façade participated in a shared social network. Studies of this art have traditionally focused on iconography and style, but, increasingly, a more holistic landscape approach has been applied. This work has shown that art is generally found in landscapes where valuable resources overlap, specifically in *rias* (coastal inlets), soils of fertile lowland, and uplands. Systematic studies have also revealed regional variation, with art on the *rias* characterized by more abstract motifs, while those in the uplands depicting, more commonly, red deer.³⁷ Interestingly, rock art tended to be placed on inconspicuous outcrops, rather than highly visible ones. A major challenge to the study of this engraved art, as with rock art in general, is its dating.³⁸

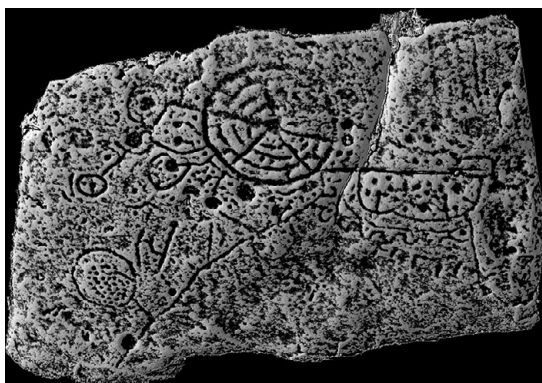


Figure 5.3 Rock 3 of Monte dos Fortes I.

From: Alves and Reis 2017, fig. 4

The Southwest

During the late fourth and early third millennium cal BCE, agropastoral groups were drawn to the fertile soils and mineral resources along the Tejo, Guadiana, and Guadalquivir river valleys. These valleys also provided corridors for transportation and exchange. Paradoxically, the rivers were also “soft” borders, as boating technologies and navigational knowledge would have been needed to cross them. These rivers were dynamic spaces, whose configurations shifted over time. The highest sea levels along the Tagus were reached at ca. 5,000 cal BCE, during the maximum extent of the Flandrian Transgression; however, by 3,500 cal BCE, processes of sedimentation had begun to fill the valley bottoms.³⁹ Settlements that once may have been located along the valley floor are now buried. Other communities found themselves increasingly distant from riverways. These landscape dynamics, shaped in part by agricultural practices that contributed to erosion, structured the social lives of people. Mountains, such as the Sierra Morena, continued to constrain movement, although their corridors provided important avenues for movement and places where groups established their living spaces and ritual monuments;⁴⁰ they were also a key source for lithic raw materials.

Although communities in the southwest participated in a network of social and economic relationships that involved the exchange of raw materials and finished products and shared common symbolic practices, there was a great deal of diversity in site types, size sizes, ritual practices, and material culture in the region. Until the 1970s, as noted earlier, the typical Late Neolithic/Chalcolithic settlement was thought to be the fortified hilltop site (*castro*), built with dry-stone walls, often with semicircular towers. Through systematic surveys, it has become increasingly clear that groups also lived (and, in some areas, primarily lived) in smaller unfortified settlements as well as aggregated in large ditched enclosures. The archaeological record attests to interactions and

exchanges between communities in the southwest (i.e., between Alentejo and Estremadura⁴¹) as well as between these communities and those in more distant regions, such as southeast Iberia and North Africa.⁴² Explaining the variability in lifeways and these interactions has been a major focus of recent research, with much of it centered on assessing the degree of social inequality and complexity.⁴³ Some archaeologists have argued that the evidence suggests state-level organization, for example, in the Upper Guadalquivir Valley, with some large centers controlling agricultural production in their surrounding territories.⁴⁴ Others posit more fluid social dynamics (such as fusion/fission) with some demographic mobility that counteracted the development of more institutionalized inequalities.⁴⁵

In cultural historical terms, this period straddles the Late Neolithic and Early Copper Age (pre-Beaker) periods. For some scholars, distinctive cultural phases can be discerned with different building programs and material culture. Cardoso has been a strong proponent of this model based on his twenty years of excavations at Leceia.⁴⁶ During the Late Neolithic (spanning the late fourth–early third millennium cal BCE), the site was established without built fortifications on a rocky escarpment overlooking the Ribeira de Barcarena. This phase was associated with carinated ceramics with *bordos denteados*. Following a period of abandonment, another group established themselves (dated to the Early Copper Age: 2,900–2,600 cal BCE). They built three lines of stone fortifications and used the distinctive ceramics known as *copos canelados* (or *copos cilíndricos*), or grooved ware. *Copos* are thin-walled and burnished cylindrical vessels decorated with horizontal grooves. They were once called *Importkeramik* because their novelty and high quality were associated with colonists who were thought to have settled in the Iberian Peninsula during the Copper Age.⁴⁷ In his analyses of the decorated ceramics from Zambujal, Kunst did not see such clear distinctions or observe material culture changes so closely tied to building phases.⁴⁸

Given their longer history of study, more is known about the fortified hilltop sites than the ditched enclosures. Vila Nova de São Pedro, on a spur overlooking the Almoester Valley, was one of the first of these fortified settlements to be excavated and long viewed as the type-site for the period (Figure 5.4). After Hipólito Cabaço (1885–1970) identified and explored Vila Nova in 1936, the site was intensively excavated between 1937 and 1967 by do Paço and Jalhay, both members of the Associação dos Arqueólogos Portugueses (Association of Portuguese Archaeologists). They worked together until Jalhay's death, after which do Paço directed excavations on his own.⁴⁹ Although their excavations were conducted prior to the development of modern excavation methods and radiocarbon dating, they revealed the architectural planning of the site as well as a rich array of objects related to the economies and religious practices of the site's inhabitants. The architecture of Vila Nova includes a stone enclosure (ca. 40 m in diameter), bastions, silos, and

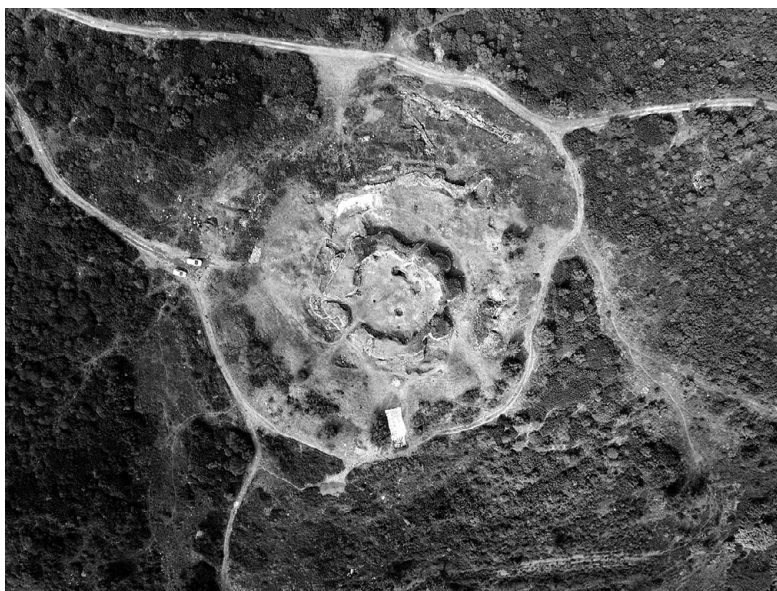


Figure 5.4 Vila Nova de São Pedro.

Courtesy: VN3000/Association of Portuguese Archaeologists

two additional defensive walls (although no clear habitations). One of the most intriguing features was a large pot in a ditch. The pot held bones of an aurochs, and the pot was covered by a layer of clay. This was considered to be the material traces of a foundation ritual. This find is a reminder that practices that can be considered ritual or religious often took place in spaces that are traditionally considered domestic, and it challenges us to think about different world views of ancient peoples. The excavators also recovered a large assemblage of artifacts, which is beginning to be analyzed systematically. These include ceramics,⁵⁰ polished stone tools, flaked flint arrowheads (many hundreds of which were found in caches/pits at the site), copper items (some with arsenic) and objects associated with metallurgical production (including crucibles),⁵¹ engraved clay loom weights, items made from bone and ivory,⁵² engraved slate plaques, anthropomorphic idols, greenstone beads,⁵³ seeds of domesticates (wheat, barley, *Fava*, linen – the latter two suggestive of irrigation) and wild plants (acorn), and the bones of wild (deer, boar, aurochs, mussels) and domestic animals (cattle, ovicaprids, pig). The excavations of do Paço and Jalhay and stratigraphic section prepared by Savory suggest that the site was occupied during the Late Neolithic, pre-Beaker and Beaker Chalcolithic, and Early Bronze Age. The excavators discerned similarities between Vila Nova and sites of southeast Iberia (and the Millaran culture, with its type-site of Los Millares), which were thought to have been inspired by cultures and colonists from the Mediterranean Levant. Most of the site's materials are housed in the Museu Arqueológico do Carmo (Carmo Archaeological

Museum), in Lisbon, in the ruins of the old Convent and Church of Nossa Senhora do Carmo, which were partially destroyed during the 1755 Lisbon Earthquake. Investigations were reinitiated in 2017 to clarify the site plan and stratigraphy and involve members of the community of Azambuja and the public.⁵⁴

Since do Paço and Jalhay's investigations, many other fortified settlements have been identified and extensively excavated in southwest Iberia. These include Penedo de Lexim,⁵⁵ Leceia,⁵⁶ Zambujal,⁵⁷ Monte da Tumba,⁵⁸ Castelo de Santa Justa,⁵⁹ Porto das Carretas,⁶⁰ Escoural,⁶¹ Monte da Ponte,⁶² San Blas,⁶³ and Cabezo Juré.⁶⁴ Despite their geographic extent, these settlements were roughly contemporary and share architectural features. Generally, they were established ca. 2,900 cal BCE, with some abandoned by 2,500 cal BCE, while others (e.g., Zambujal) continued to be occupied until the early second millennium cal BCE.⁶⁵ Their sizes range from less than 1 ha to over 5 ha, with most ca. 1 ha.⁶⁶ Like Vila Nova, they were generally enclosed – partially or entirely – by one or more lines of stone walls, and these walls were often built with circular towers or bastions. At least four fortification lines have been identified at Zambujal, which were built and modified throughout the site's use (Figure 5.5).⁶⁷ The original width of these walls was ca. 1–1.5 m, and portions have been preserved to a height of 4 m. With the filling in of the tower/*barbacão* in the Bronze Age, the wall grew to almost 16 m in width. Within and outside their walls are round houses with stone foundations

(a)



Figure 5.5 (a) Zambujal; (b) showing changes in site plan over site's history.

Courtesy: (a) German Archaeological Institute, Madrid. (b) M. Kunst

(b)

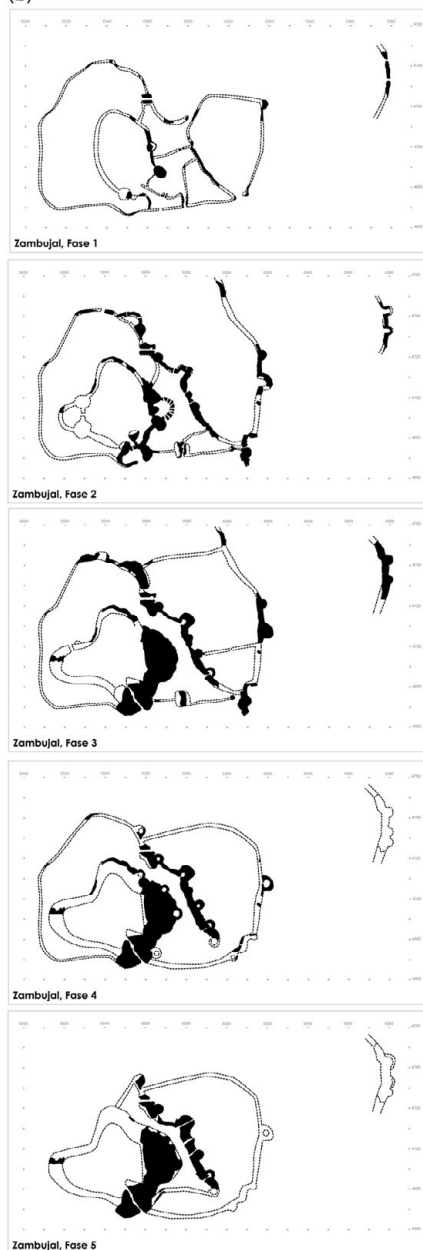


Figure 5.5 (cont.)

(*cabanas*). In the Estremadura, these contexts tend to be associated with a set of diagnostic ceramics, including *copos*, vessels with impressed acacia leaf design (*folha de acácia*) (Figure 5.6a), and plates with an almond-shaped rim (*pratos de bordo almendrado*) (Figure 5.6b). Groundstone tools, grinding stones, flint blades and arrowheads, and copper items (awls, axes, etc.) were also found.

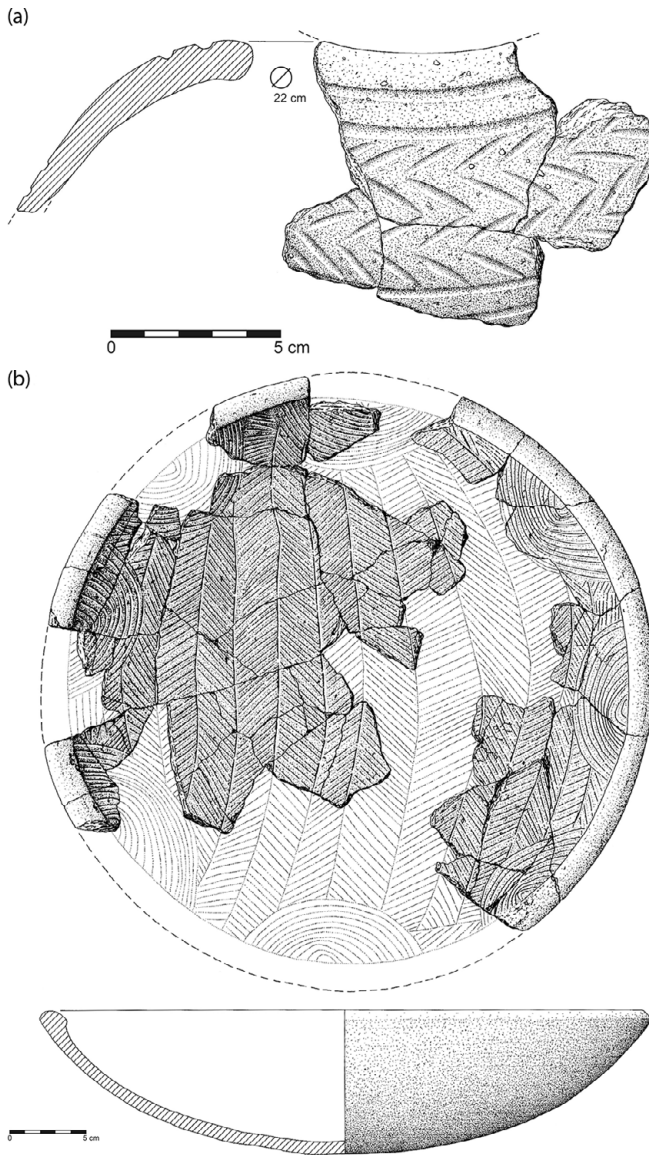


Figure 5.6 (a) Folha da acacia ceramic, Moita da Ladra; (b) Prato de bordo almendrado (plate with almond-shaped rim), Outeiro Redondo.

From: (a) Cardoso 2014b, fig. 45. (b) Cardoso 2011

Settlements to the south (Algarve), such as Castelo de Santa Justa, show some differences. Undecorated ceramics predominate, which take the form of plates and bowls (some carinated), and *vasos suporte* (or support vessels). Flint arrow-heads and blades, and copper items (awls, axes, saws) as well as objects related to smelting (crucibles, molds, etc.) are also known.⁶⁸

A range of economic and ritual practices took place at fortified settlements, which provide a window into the lives of their inhabitants and the role they

played in regional interaction networks. The processing of crops is attested by grinding stones, generally made of granite, whose nearest sources were in the Alentejo. At Leceia, a structure was found with over a dozen grinding tools. Paved features in other structures, circular in shape and with a working surface regularized by a layer of compacted earth, were interpreted as threshing floors based on their similarity to threshing floors known in rural communities in Portugal.⁶⁹ The presence of blanks or unfinished tools made from amphibolite, basalt, and other stones at Leceia, Pragança, and Zambujal attests to the manufacture of polished stone tools, with amphibolite being the favored raw material, despite other available stones.⁷⁰ The closest source for amphibolite is the Ossa-Morena Zone in the Alentejo, where copper ores were also likely obtained for metallurgical production. Textile production is evidenced through loom weights and spindle whorls. Loom weights can be subquadrangular in form and decorated (as typically found in sites of the Lisbon area), or crescent or subrectangular and undecorated (as in the Alentejo).⁷¹ Boaventura noted that the forms and designs of loom weights (as well as ceramics) are different in the Estremadura and Alentejo, while the typologies of flint arrowheads and polished stone tools are shared. He proposed that this may reflect gendered mobility patterns, with the women making the ceramics and loom weights staying closer to home and the men more involved in trading and mobility between the two regions. One could question the assumptions underpinning Boaventura's model, but it remains a notable contribution in which gender was considered in the creation of the archaeological record for prehistoric Iberia.

Metallurgy has received the greatest attention of all the technologies. This is because of its historical association with the east Mediterranean colonizers of the peninsula and its role in Childean models of social evolution. Metallurgical production in the southwest has been documented through the presence of crucibles, prill, slag, and ore at numerous walled sites, including Zambujal, Penedo, Fórnea,⁷² Leceia,⁷³ and Cabezo Juré,⁷⁴ in addition to Vila Nova de São Pedro.⁷⁵ At Zambujal in House V, a clay-ring and fireplaces were found with hundreds of copper prills, slag, and crucible fragments. The house appears to have been a space where metallurgical production occurred, although the lack of ores found in the house make it unlikely that it was associated with smelting. Interestingly, all domestic spaces excavated at Zambujal included copper prills and crucible fragments, suggesting the metallurgy was not confined to just one place in the community. However, these spaces were not necessarily used during all phases of the site's occupation.⁷⁶ That copper objects can occur late in the sequence of fortified settlements or that the production was small-scale and skill levels low suggest that the production and consumption of metal objects were the outcome of social and economic changes, rather than a catalyst for these changes.⁷⁷ Outcrops of copper ore are also found in diverse sources in the Iberian southwest. Those of the Estremadura are relatively small, while larger sources are known in the Ossa-Morena

Zone, in the Alentejo and Western Andalusia. Lead isotope and trace element studies suggest that the copper used at Zambujal most likely derived from sources in the Ossa-Morena Zone.⁷⁸

The greatest concentrations of copper slag known for southwest Iberia were recovered from surveys and excavations at Cabezo Juré (8 kg) and Valencina de la Concepción (16 kg). Tuyeres from Valencina have suggested to the excavators the existence of a smelting quarter, and, by implication, that a major metallurgical industry of supraregional importance was in place that stimulated social change at the site and region.⁷⁹ However, Gauss argued that, while the quantity of the material is exceptional, the slag is highly heterogeneous and viscous, suggesting that the smelting process was inefficient and, indeed, similar to that noted at other sites in Iberia.⁸⁰ Furthermore, nothing on the scale of production is comparable to the hoards of Central Europe, which involved several kilograms of metal. Some research suggests that metallurgical activities during the time left a geochemical signature on the landscape and were the earliest form of environmental pollution in Iberia.⁸¹

In addition to productive activities, mortuary rituals are documented in settlements, such as at Zambujal and Leceia,⁸² although the deposition of the dead primarily occurred outside walled settlements. At Zambujal, 349 human bone fragments were recovered; these included the remains of adults and subadults, representing all body regions. Some areas of the site had higher concentrations of remains, which may suggest that those areas were the main burial areas. However, the minimum number of individuals for the different areas, taking into account chronological differences, are quite low; in total, around twenty people have been estimated. These remains likely represent a range of practices and taphonomic histories. For example, five bones from an infant were recovered from Region KM. As infants are rarely found in tombs in the region, this may indicate that infants were sometimes buried in settlement contexts. Other dispersed remains of adults may be people who died in violent conflicts. Isotopic studies of a sample of the adult individuals recovered from Zambujal indicate that their diet was similar to others from the region, and none were migrants. Thus, it is not clear what factors (other than those related to the infant) explain the presence of these individuals at the site. Individuals whose remains were recovered at Leceia also experienced diverse histories. Those that date to the Chalcolithic occupation of the settlement (MNI = 5) were found in a small cave (Locus 3) on the eastern side of the hill; the remaining individuals (MNI = 3 from Locus 1; MNI = 1 from Locus 2) date to the second millennium cal BCE use of the site.

In addition to the fortified settlements, communities also lived in small and unenclosed settlements that were often less than 0.5 ha in area.⁸³ Pombal is one such site. There, hundreds of clay loom weights, groundstone tools, ceramic plates, and later Beaker vessels were recovered.⁸⁴ In the Antequera region, some 290 Copper Age sites were found within an area of 2,640 km², and most

were open-air pit complexes located in low-lying settings; only one walled site is known.⁸⁵ The high concentration of settlements in this region and their proximity to the enormous megalithic monuments of Menga and El Romeral (see later) point to the close relationship between population density and labor mobilization, which must have been based on highly productive subsistence.

During the 1980s, a new site type was discovered in southwest Iberia – the ditched enclosure. In this region, these sites are concentrated in the Alentejo along the Guadiana and Guadalquivir Rivers and also known in the Algarve. These negative earthworks are generally made up of concentric rings of ditches (of U- or V-shaped cross-section) and scattered pits, which are rare or absent in walled hilltop sites.⁸⁶ Most were established ca. 3,500 cal BCE, reached their apogee ca. 2,500 cal BCE, and were abandoned ca. 2,250 cal BCE. Bela Vista 5 is an unusual case, as it was in use until ca. 2,040 cal BCE.⁸⁷ In general, ditched enclosures were in use for a longer span of time than most stone-walled settlements, and their earliest construction appears to predate these sites.⁸⁸

Ditched enclosures have challenged archaeologists to think in new ways about the spatial dimensions of domestic and mortuary activities, as these activities, such as metallurgy, food consumption, and the deposition of broken artifacts, animal bones,⁸⁹ soil, and human remains are often found in close association. How the ditches themselves functioned is unclear, and, indeed, they may have served different purposes at different sites and different times. It has been argued, for example, that the ditches at Marroquies Bajos were used for irrigation and water management.⁹⁰ The location of other enclosures near streams, such as La Pijotilla and Porto Torrão, may support their role in controlling water or flooding.⁹¹ Given that ditched enclosures are generally situated in lowland areas and not naturally defensible, it is possible that the ditches provided some means of controlling access to the interior space of the sites. Their complex chronologies, which include modifications over time, make it difficult to assess the validity of these interpretations at this time.⁹²

The diversity of activities, structures, and features found at ditched enclosures is matched by the huge range in their sizes. Some are extraordinarily large, such as Valencina de la Concepción. Covering an area of 450 ha, it has been called a mega-site.⁹³ Marroquies Bajos, at 113 ha, has been considered a macro-village.⁹⁴ La Pijotilla is 80 ha,⁹⁵ and Porto Torrão (also known as Ferreira do Alentejo) is 70 ha.⁹⁶ Even the smaller sites, such as Perdigões (20 ha)⁹⁷ and Alcalar (20 ha),⁹⁸ suggest that a significant workforce was mobilized.⁹⁹ Some ditches at Perdigões were 3 m deep and 2–3 m wide. These enclosures are not unique to Iberia, however. They are similar in form and location (on low-lying land along major riverways and their tributaries) to the causewayed enclosures of Britain and Ireland, *enceintes fossés* of France, and European ditched sites.¹⁰⁰ However, the areal extent of these sites and their ditched constructions are, in reality, palimpsests,¹⁰¹ the cumulative by-product of long histories, some lasting nearly a millennium, and multiple building phases, often



Figure 5.7 Ditched enclosure of Perdigões, as seen through magnetometry.
Courtesy: Era Arqueologia SA

with periods of abandonment. Thus, their sizes do not necessarily relate directly to population size. Indeed, whether they even constitute a discrete “site” is a question worthy of further reflection.

To consider in greater depth the role of size and function, two ditched enclosures will be compared: one, relatively small – Perdigões (Figure 5.7) – and one large – Valencina de la Concepción (Figure 5.8). Perdigões has been termed an “archaeological complex,” given its many architectural features and practices. In the 20-ha area of the complex, dated to between 3,500 and 2,000 cal BCE, are ditches, pits, burial spaces, including a tholos, as well as a cromlech and menhir. The coordinator of the excavations, António Valera, has argued that the features, artifacts, and human and animal remains from the complex suggest that it functioned as a space of aggregation, and not a place of habitation, at least in the way that a village is traditionally understood. A large number of objects related to ritual practice were recovered in the different sectors of the site, though primarily in funerary contexts. These include figurines (anthropomorphic and animal, some made on ivory), phalanx idols (made from the phalanges of *Cervus* and *Equus*), stone vessels, lunulae, betyls, and engraved slate plaques. The frequency and diversity of these items increased over the site’s history, which may be an expression of the development of social complexity and interregional interactions.¹⁰² The most recent investigations have been devoted to assessing the role of Perdigões as a locus of inter-regional interactions.¹⁰³

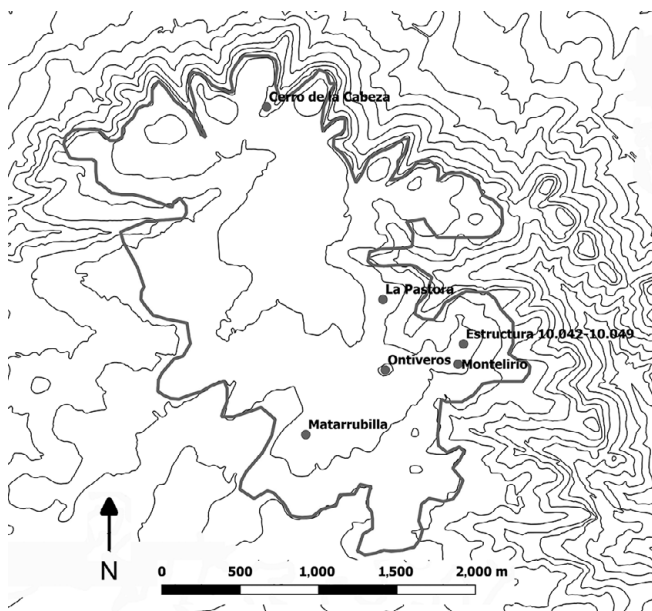


Figure 5.8 Valencina de la Concepción, showing location of major megalithic monuments.

From: García Sanjuán *et al.* 2018, fig. 3; courtesy: the Research Group ATLAS (University of Seville)

Valencina-Castilleja is a sprawling complex that overlooks what was, during the third millennium BCE, a marine gulf created by the Guadalquivir River. It includes a ditched enclosure (with metallurgical production area), thousands of pits, and megaliths, including the monumental tombs of Cueva de la Pastora, Matarrubilla, Ontiveros, and Montelirio. It extends over 450 ha and has been called a mega-site.¹⁰⁴ It was first occupied ca. 3,200 cal BCE, and settlement or use of the area lasted until ca. 2,300 cal BCE. Because of the many sites associated with the complex of Valencina-Castilleja and the many excavators involved in their investigation, there is no one monograph that ties all of these sites together. The enormity of Valencina-Castilleja has reanimated discussions of urbanism in third millennium cal BCE Iberia,¹⁰⁵ which were largely abandoned after Mediterranean colonial models were rejected. The site's location in a remarkably rich and diverse biome, near the Mediterranean and with access to northern Africa, and its proximity to the abiotic resources of the Sierra Morena, with its copper ores, must have played a key role in its original settlement and the ability of its inhabitants to support a large population and produce and access valued resources.

Given their temporal overlap, archaeologists have debated whether the different site types were functionally different. Risch¹⁰⁶ analyzed the density of querns at fortified, ditched, and unenclosed open-air sites and compared their frequency. He found no significant differences. Bell Beakers of the late

third millennium cal BCE (see [Chapter 6](#)) are also found at both fortified and ditched sites. Indeed, the enclosure of Porto Torrão has one of the largest assemblages of Bell Beakers in Iberia.¹⁰⁷ Given this patterning, Lull and colleagues¹⁰⁸ argued that they were functionally comparable. Valera,¹⁰⁹ however, has argued that ditched enclosures (such as Perdigões) are associated with a greater range of ritual activities, aligned with astronomical features (oriented to the east, like megaliths), and more variable in size, location, and occupation duration than fortified sites. He, thus, envisages them as places of aggregation, with important cosmological significance, and functionally distinct from walled settlement sites. Indeed, the defensive qualities of ditched enclosures do not seem particularly strong, unlike fortified settlements. Furthermore, evidence for dwellings or occupation levels are rare on ditched enclosures.¹¹⁰ At Valencina, for example, there are no circular-plan dwellings with stone foundations nor sun-dried mud walls of the type abundant at walled sites.¹¹¹ There is, however, evidence for copper smelting at Valencina¹¹² and items related to smelting (crucible fragments, copper droplet, etc.) from a ditch at Perdigões.¹¹³

In addition to settlements and ditched enclosures, sites where resources were extracted or specialized sites where objects were produced have provided insights into the economic foundations of social and political life. Salt-processing sites have been identified in the Guadalquivir Valley (La Marismilla),¹¹⁴ along the Tagus and Sado valleys (Monte da Quinta 2, Ponta da Passadeira, Comporta), and in the Algarve (Praia do Forte Novo).¹¹⁵ At Monte da Quinta 2, thousands of fragments were recovered of ceramic bowls used to produce brine as well as thin conical molds used to process brine and obtain salt loaves after being heated (process of ignition and briquetage). Valera astutely noted that we should be attentive to those regions lacking in salt resources, as they would have been the primary exchange partners of these producers.¹¹⁶ These salt-lacking communities would have been primarily found in the interior of the peninsula and in geological landscapes lacking in salt minerals, such as the Alentejo. Salt processing and other industries that involved burning, such as metallurgy and ceramic manufacture, intensified the pressures that people placed on their biotic landscape and likely contributed to the deforestation and erosion that are evident.

Another valued material during the Late Neolithic and Copper Age of southwest Iberia was variscite (known in the older literature as callais/callaite).¹¹⁷ Artisans fashioned this lustrous turquoise-green stone into beads and pendants that adorned the bodies and fashioned the identities of special individuals.¹¹⁸ Variscite mining has been identified from this period at Pico Centeno.¹¹⁹ There, tool-marked scars and cavities along mineral veins provide direct evidence of mining. Associated tools, such as picks and hammerstones, and production indicators, including preformed beads and debitage, suggest that some initial preparation of the objects took place close to their source.

Although flint was still widely used for the manufacture of blades, arrowheads, and other items, relatively little is known about the extraction of these materials from their sources. Some production sites for bifacially flaked tools have been identified close to flint sources at Arruda dos Pisões, Santana, and Casas de Baixo.¹²⁰ Sourcing studies make clear, however, that a fairly extensive network was involved in the acquisition of a diverse range of raw materials, which included flint.¹²¹ Other materials include obsidian (from Sardinia),¹²² cinnabar,¹²³ ochre,¹²⁴ ivory,¹²⁵ and amber (from Sicily).¹²⁶

Despite the clear importance of settlement and production sites for understanding the ancient peoples of the southwest, mortuary spaces have traditionally dominated archaeological investigations, given their abundance and visibility. During the Late Neolithic/Early Chalcolithic, the dead were housed in diverse spaces, some specifically built for the dead and others more closely associated with domestic activities, as described earlier. In these tombs were placed the remains of a few to a few hundred individuals. These spaces include reused dolmens, passage graves, caves and rock-shelters (some also reused), rock-cut tombs (also called artificial caves and hypogea), corbel-vaulted tombs (*tholoi*), pits, and ditches.¹²⁷ Another practice at this time involved the annexing of tombs onto older tombs. This was documented at Comenda 2 and Farisoa, in the Alentejo. At both sites, a tholos was annexed to each of the original passage graves. At Olival da Pega 2, where a large passage grave was originally built (OP2a), a tholos was annexed (OP2b), then another tholos was annexed to the other side of the passage of OP2 (OP2d), and, finally, a microtholos added to OP2d (OP2e).¹²⁸ These instances, as well as the reuse of older tombs, suggest that some individuals or groups at this time wanted to materially connect with ancestral spaces, people, and objects, perhaps as part of a social or political strategy, or as a response to threats to traditional ancestral bonds.

The diversity of mortuary spaces is striking. Archaeologists have attempted to explain this variability in terms of local geology or labor availability, although cultural traditions, local religious ideologies, the social status of the deceased, or even the mode of death of the individuals may have also been important factors. The ability to mobilize labor – likely related to agricultural productivity – seems to be one important factor. For example, megaliths in the southwest, where agricultural productivity along the major riverways is high, tend to be larger than in other regions of the peninsula. Geology is another variable. In the karstic areas of the Estremadura, Algarve, and western Andalucía, natural caves and rock-shelters were available, and hypogea – such as those at Quinta do Anjo¹²⁹ – could be carved from the relatively soft bedrock of the local limestone and sandstone. Similarly, passage graves and tholoi are more often found in these karstic regions, as it is easier to fashion smaller stone from this softer material. Megaliths tend to be found in or near grano-dioritic regions, such as the Alentejo, where large durable stones could be quarried. However, this patterning does not always hold. For example,

about twenty megalithic dolmens – the clusters of Belas and Trigaches – were constructed in the Lisbon area using slabs of the locally available limestone.¹³⁰ The construction of these megaliths in a landscape where caves and rock-shelters existed brings up the interesting question as to why these available – and far less labor-intensive – spaces were not used. To better understand the relationship between geology and building materials, archaeologists have begun to characterize and source megalithic stones. Studies were undertaken at Vale de Rodrigo,¹³¹ the Antas of Rabuje,¹³² La Pastora,¹³³ Montelirio,¹³⁴ and Menga.¹³⁵ They revealed that some stones were often transported a significant distance (such as 8 km, in the case of the capstone at Rabuje 1), although more locally available stones were also used. Of course, even hauling a multiton stone a few hundred meters requires a certain number of able-bodied individuals, so the ability to mobilize labor must have been a critical factor in a community's ability to construct a tomb. Evolution in cultural or social practices also accounts for some of the variability, and these changes make it possible for archaeologists to generate relative dating sequences for tombs. Dolmens were constructed as early as the mid-fifth millennium cal BCE in the Alentejo, while in the Lisbon Peninsula and Estremadura, in general, the earliest were built in the mid-fourth millennium cal BCE.¹³⁶ Given the repeated reuse of these tombs, however, which sometimes extended over centuries and millennia, dating of the contents of the tombs must be attentive to these histories.

The fourth to third millennia cal BCE was the apogee of megalith construction. Like the skyscrapers of New York and Dubai, some Iberian megaliths and their imaginative architects and enlisted builders seem to have competed with each other in size and engineering complexity. When taking in their different forms and the sensory experiences they trigger, it is difficult not to imagine that they were built by the “starchitects” and most skilled engineers of their time. Like the works of contemporary icons of architectonic prowess, such as Zaha Hadid, Bjarke Ingels, and Frank Gehry, these monuments were powerful symbols that transformed landscapes, structured movement, created memories, and obliterated others. They also housed the special dead and their special objects. Today, we can only imagine the struggles, decisions, injuries, intrigue, and celebrations that marked their construction. These giants are found in southern Iberia, in the Alentejo, and in western Andalucia. The enormous dolmen of Anta Grande do Zambujeiro, in the Alentejo, for example, has a chamber made with seven 5 m-tall granitoid slabs and a corridor made from 2 m-high orthostats.¹³⁷ It was likely constructed at the end of the fourth/beginning of the third millennium cal BCE and was in use until at least the late third millennium cal BCE. (Figure 5.9) Among the megaliths identified and excavated at Valencina is another giant, Montelirio, with a corridor 39 m long (Figure 5.10).¹³⁸ The Dolmen de Soto is also notable, at 21 m in length and with a mound 3.5 m high (Figure 5.11).¹³⁹

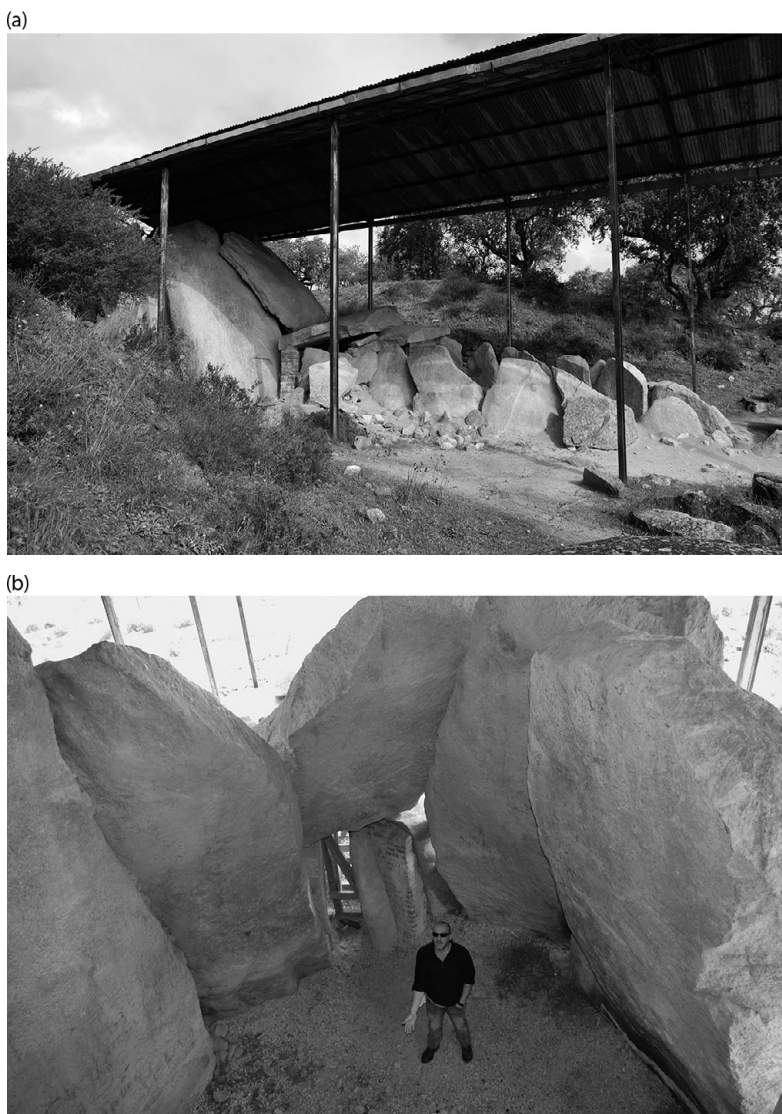


Figure 5.9 Anta Grande do Zambujeiro: (a) view to tomb; (b) from inside central chamber. Courtesy: the Research Group ATLAS, University of Seville

The cluster of monuments at Antequera, in western Andalucía, is particularly striking. They include three massive structures: the dolmens of Viera and Menga (built during the Late Neolithic) and tholos of El Romeral (constructed later than the dolmens, during the Chalcolithic). They are the largest megaliths in the Iberian Peninsula.¹⁴⁰ The length of Menga is 27.5 m.¹⁴¹ It is made up of twenty-three orthostats and five massive capstones, the largest of which is ca. 6×6 m and weighs 180 tons (Figure 5.12a). Viera is comprised of a long corridor extending 16.1 m, whose height reaches 3.30 m at the chamber. The chamber of El Romeral is 5.20 m in diameter. Each monument is



Figure 5.10 Montelirio.
Courtesy: the Research Group ATLAS,
University of Seville



Figure 5.11 Dolmen de Soto.

Photo: K. Lillios, 2017

distinctive in form, yet they seem to constitute a megalithic family; Menga and Viera are 70 m from each other, while El Romeral is ca. 2 km to the northeast from the two dolmens. Their significance, however, lies not only in their sizes, but in their relationship to the surrounding landscape. Unlike most megaliths that are oriented toward sunrise, the axis of Menga faces the northern side of La Peña de los Enamorados, a craggy mountain 6 km east with a striking anthropomorphic silhouette (Figure 5.12b). Indeed, it points to the rock-shelter of Matababras, at the base of La Peña, where schematic rock art and other smaller megaliths, known as Piedras Blancas I and II, were found. The landscape approach to the Antequera monuments illustrates how critical it is to envision these structures as elements in material networks of meaning for ancient peoples, which tethered them to place and time.

Within these tombs, special offerings were placed with the deceased, some of which were especially made to accompany the dead. As with the tombs' formal variability, there is also an enormous range in the quantity and quality of goods housed with the dead. These included polished stone axes and adzes, which were often unused,¹⁴² flint blades, arrowheads, stone beads, globular ceramics, which are generally undecorated but sometimes have “ocular” motifs, stone and bone cylindrical “idols” (also sometimes incised with “ocular” motifs) (Figure 5.13), and engraved plaques.

For over 100 years, archaeologists have been captivated by the exquisite artistry of these plaques. Over 1,400 have been found in hundreds of burials in southwest Iberia, and they were most often made on slate (Figure 5.14). Scholars have traditionally interpreted them as representations of the European Mother Goddess.¹⁴³ The diversity in their form and spatial distribution, based on a comprehensive catalog,¹⁴⁴ however, suggests that one interpretation for all the plaques is unlikely. Analyses of the different plaque types as well the

(a)



(b)



Figure 5.12 (a) Dolmen de Menga; (b) view from Menga to Peña de los Enamorados. Photos: K. Lillios, 2017

qualitative features associated with their *chaîne opératoires* suggest that the plaques likely had different purposes. I have suggested that the most common type – the Classic plaque – recorded the genealogies of a class of special individuals, whose ancestry may have been critical to accessing important resources. Debate still continues on their meaning, however.¹⁴⁵ A tantalizing glimpse into the production of the plaques was revealed in 2003 with the discovery of the ditched enclosed settlement of Águas Frias, on the Guadiana River. There, plaque roughouts made of slate were found. Some were sketchily engraved, although none were perforated.¹⁴⁶ The site has been interpreted as a school or atelier for plaque production. Another site with evidence for a

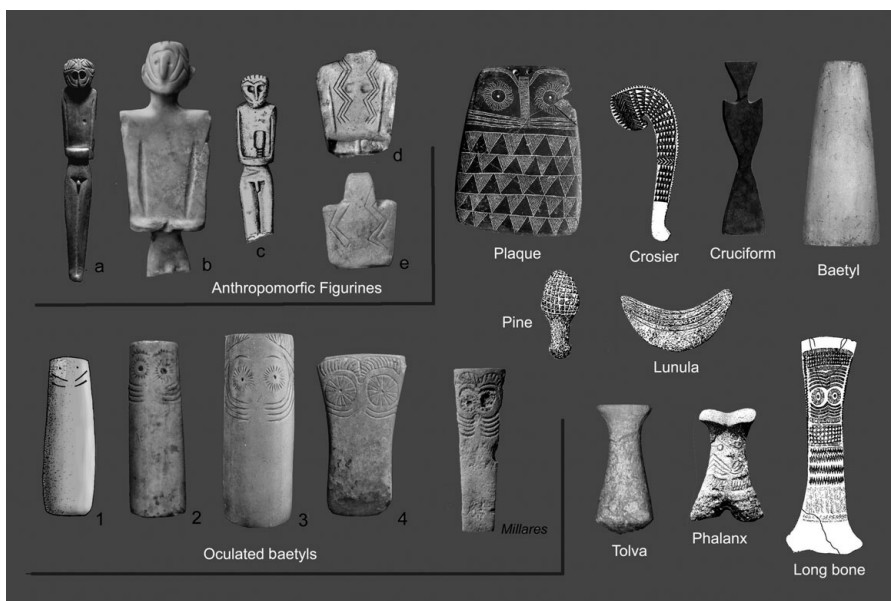


Figure 5.13 Eyed idols.

Courtesy: V. Hurtado

plaque manufacture is Cabeço do Pé da Erra, a village dated to three phases between 2,700 and 2,200 cal BCE.¹⁴⁷ The plaque workshop dates to phase 1. During the second phase, ditches and huts were built. Some preforms of slate plaques were also found, suggesting a continuity of production practices. The site underwent new ditch building in phase 3, after which the site was burned and abandoned.

Some objects and human remains had extended biographies, as indicated by the repurposed plaque fragments and human cranial disks sometimes found in tombs.¹⁴⁸ These curated items suggest that burial monuments and the materials they housed triggered collective memories that some people, at times, challenged or appropriated for individual purposes.

One tomb in southern Iberia stands out for the objects found in it. This is Montelirio, part of the Valencina mega-site. The monumentality of Montelirio is matched by an abundance and variety of grave goods rarely seen in prehistoric Europe. The largest assemblage of amber objects known in Iberia was recovered in this tomb: 250 beads and pendants. To put this number in context, the site with the next largest assemblage of amber is Los Millares, in Almeria, where more than eighty megalithic tombs yielded ten such amber beads. These amber items were derived from a source in Sicily. Eighteen fragments of embossed gold sheets were recovered, one with the same ocular motif found on ceramics and the engraved plaques. An estimated million beads, made of shell and stone, were found in close association with some of the individuals in the large chamber (Fig. 5.15a). They were most likely sewn

(a)



(b)

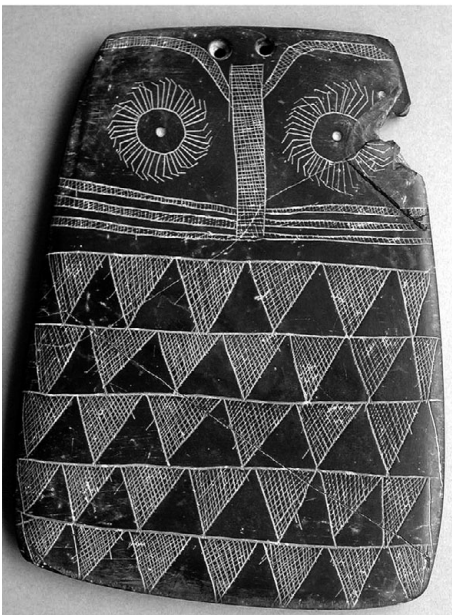


Figure 5.14 Engraved slate plaques from (a) Oliva da Pega 1; (b) Valencina de la Concepción.

Photos: (a) K. Lillios; courtesy: Museu Nacional de Arqueologia (Archaeological Museum of Seville).

(b) J. T. Thomas; courtesy: Museu Arqueológico de Sevilla

(a)



(b)



Figure 5.15 (a) Individual UE 343 from Montelirio's large chamber, dressed in attire made of perforated beads (UE 344); (b) dagger with ivory hilt and sheath and rock crystal blade found in the upper level of the chamber of Structure 10.049; (c) carved elephant tusk found in the upper level of the chamber of Structure 10.049.

Photos: (b, c) Miguel Ángel Blanco de la Rubia; courtesy: (a–c) the Research Group ATLAS, University of Seville

(c)

Figure 5.15 (*cont.*)

into burial clothing or shrouds. Another indicator of the sumptuousness of this burial are the almost 200 exquisitely flaked hollow-based arrowheads made of mylonite and rock crystal, which, like most of the other flaked lithics at the site, show no signs of use (Plate 5). These represent a technical skill and artistry rarely found in lithic production. The large number (100+) of animal figurines, combs, and other items made from African ivory further attests to the social distinctiveness and regional connections enjoyed by the Montelirio community. Perhaps most intriguing is the fact that the twenty or so individuals in the tomb's main chamber were either women or are undetermined; no male has been identified. In a nearby burial structure from Sector PP4-Montelirio, known as Structure 10.024–10.049, whose individuals may be related to those from Montelirio in terms of ancestry,¹⁴⁹ another remarkable set of grave goods were found. They were found with a young male and included an unworked whole elephant tusk. Above this individual, in the upper level of the 10.049 chamber, another collection of objects was recovered, which included a dagger with an ivory hilt and rock crystal blade (Figure 5.15b) and another elephant tusk, in this case carved in the form of a cornucopia or musical instrument (Figure 5.15c).

The dead in the southwest were treated to a range of mortuary rituals, including inhumation and cremation.¹⁵⁰ The bones and artifacts found with

the dead were sometimes colored with ochre or cinnabar. Some individuals, such as mortuary specialists or priests, must have had close interactions with the bodies of the dead, as bodies were also manipulated after death. For example, defleshing is evident through cut marks or scrape marks at Carcavelos¹⁵¹ and Bolores.¹⁵² At the passage graves at the Perdigões enclosure and La Pijotilla, cranial bones were found along the walls of the chamber.¹⁵³ The eight seated bodies found against the wall in the Dolmen de Soto may have been mummified.¹⁵⁴

Although thousands of tombs have been identified in southwest Iberia, the analysis of human remains found within them has been a major challenge.¹⁵⁵ One reason for this is that the majority of these sites were identified and excavated prior to the development of modern excavation methods and therefore lack spatial provenance for their associated finds. Another difficulty is that these tombs are collective, and skeletal remains are commingled and often highly fragmented. Acidic soils also contribute to these difficulties.

Nonetheless, important studies have been carried out on remains from old excavations,¹⁵⁶ and a host of new excavations have incorporated an array of bioarchaeological methods in recording and analysis.¹⁵⁷ As a result, a panorama of new insights into health, mobility, diet, violence, and social life is being revealed. For example, studies have investigated diet and mobility, in large part to assess whether significant differences could be detected that might speak to the question of social inequality.¹⁵⁸ In general, these studies tend to show largely local populations, although some sites present significant numbers of nonlocal individuals, such as Valencina-Castilleja,¹⁵⁹ suggesting that they served as special aggregation places for diverse populations. These populations also tended to consume largely terrestrial proteins.¹⁶⁰ Dental morphological studies suggest that some people living in southwest Iberia had ancestries in North Africa, which is not surprising given the known movement of goods, such as ivory, across the Strait of Gibraltar.¹⁶¹ Children have also been a new focus of research.¹⁶² Activity-related pathologies have been discerned. For example, moderate-high levels of mercury were found in some individuals in southern Portugal¹⁶³ and at Valencina.¹⁶⁴ This was caused by contact with cinnabar used in body paint or in painting objects and may have led to these individuals' deaths. In general, instances of disease are low. The principal ailments were joint disease, such as osteoarthritis. Some pathologies consistent with metabolic disease are also in evidence; for example, porotic hyperostosis and cribra orbitalia were documented at La Pijotilla and Valencina¹⁶⁵ and in burials of the Portuguese Estremadura.¹⁶⁶ Of dental diseases, the most frequent pathologies were calculus, linear enamel hypoplasia, caries, and periapical lesions.¹⁶⁷

Díaz-Zorita Bonilla conducted a major bioarchaeological study of the human remains recovered at Valencina and Pijotilla and compared these to forty-four other Copper Age sites in southwest Iberia to determine whether there was any significant patterning in age, sex, diet or mobility among the

individuals.¹⁶⁸ While no significant differences in the age, sex, and diet were found by context, some interesting distinctions were noted in the health status and diet of individuals found in megalithic versus nonmegalithic structures. Megalithic tombs housed individuals who consumed a higher protein diet than those in nonmegalithic tombs. Hypoplasia was also more prevalent in individuals housed in megalithic tombs, which could be seen as an illustration of the osteological paradox, in which higher status individuals were able (through their diet and social support) to withstand stresses and survive. This may suggest that the higher labor involved in megalithic tombs materialized some kinds of special social distinctions.

Beck's analysis of the human remains from three necropoli at Marroquies Bajos presented a somewhat different picture.¹⁶⁹ A minimum number of 280 individuals were housed in the graves, including adults and subadults (although very young infants were rare), as well as females and males. There were no significant differences discerned between the demographic profiles of the three tombs, nor significant differences in the ways these individuals were treated by age or sex. Thus, in contrast to the significant labor investment represented by the site and its ditches (and, one might assume, social inequality), the burial realm does not appear restrictive or hierarchical.

Studies on the nature and frequency of violence experienced by Late Neolithic/Early Chalcolithic populations suggest that some individuals suffered from cranial injuries. However, most appear to have healed, and, indeed, it is difficult to know whether these injuries were intentional.¹⁷⁰ One instance is known of an arrowhead embedded in a vertebra of an individual buried at Lapa do Bugio.¹⁷¹ Trepanation has been documented in a few sites of the Estremadura (such as Eira Pedrinha and Gruta da Fontainhas), and often the individual survived the operation.¹⁷²

The Southeast

The Late Neolithic and Chalcolithic of the Iberian southeast has been a major research focus since the late nineteenth century. Indeed, Ramos Millán has argued that

In the prehistoric Southeast more than any other part of Spain, the international development of archaeological studies has brought to bear the complete range of historical and anthropological theories that form the basis of Western archaeological thought. The interest generated by the rich sequence in the Southeast has driven the historiographic development of archaeology in Spain.¹⁷³

The first investigators of the archaeology of the region were two Belgian mining engineers and brothers: Louis and Henri Siret.¹⁷⁴ The Sirets were

contracted by the Compañía Minera de Sierra Almagrera (Mining Company of the Sierra Almagrera) to survey the region of Cuevas del Almanzora for silver ores. Between 1880 and 1887, their most productive years, they discovered dozens of archaeological sites, which formed the basis for the first considerations of the prehistoric archaeology of Spain. These included the Late Neolithic settlements of Tres Cabezos and Cuartillas, the Chalcolithic hilltop settlements and associated burials of Los Millares and Almizaraque, and Early Bronze Age settlements, including the type-site of El Argar. During the period between 1880 and 1887, they also excavated the Chalcolithic open-air sites of Campos and Parazuelos. Their findings from these explorations and excavations were published in *Les Premiers Ages du Metal dans le Sud-Est de l'Espagne* (*The First Ages of Metal in the Southeast of Spain*), in 1887.¹⁷⁵ Following the publication of *Les Premiers Ages*, Pedro Flores (1840–1928), Luis Siret's foreman (*capataz*), carried out the first excavations at Almizaraque and Los Millares. Flores worked under the direction of Siret, taking detailed notes and producing sketches. Siret, who was living at the mining center of Herrerías at the time, used Flores' records as a basis for his drawings and text, while also confirming these on the ground. Los Millares became the type-site for the period in the region – the Spanish counterpart to Vila Nova de São Pedro. Consistent with the migrationist/colonialist paradigms of the time, Siret viewed Los Millares as a Phoenician trading post. He did, however, have difficulties reconciling the archaeological evidence with the literary evidence about the Phoenicians, who were supposed to be silver miners, although there was no silver found in Chalcolithic sites of Spain.¹⁷⁶

Many of the original assessments of the sites excavated by the Sirets and studied by contemporary scholars, such as Bosch-Gimpera and the Leisners, have been modified through radiocarbon dating, new excavations, and more critical assessments of the archaeological record. It is now clear, for example, that there is a great deal of variability in Chalcolithic settlement types in the southeast, and Los Millares can no longer be considered a typical site.¹⁷⁷ El Gárcel, originally thought by the Sirets to date to the Late Neolithic based on lithics and ceramics, was discovered to have copper slag; thus, it must date to the Chalcolithic,¹⁷⁸ although it is possible that the site was also sporadically used prior to then. Bosch-Gimpera,¹⁷⁹ who gave the name of the Almería culture to denote Late Neolithic open-air sites, viewed the cultural developments of the period as derived from Africa. Although there is no evidence of direct contact with African groups at this time, the term “Almería culture” is still sometimes found in the literature.¹⁸⁰ A striking fact is that, despite the importance of the Spanish southeast for the history of archaeology of Spain and the Iberian Peninsula, only ten radiocarbon dates for megalithic sites in the southeast were obtained by 2012.¹⁸¹

The rich evidence for prehistoric human occupation and monumental architecture in what is today a rugged, arid, and largely barren landscape has

made the southeast the epicenter of questions and debates surrounding the nature and origins of social inequalities in Iberia.¹⁸² Why did ancient people choose this forbidding landscape to live? Was the environment in the Middle Holocene the same as it is now? Assuming the walls surrounding settlements, like Los Millares, were defensive, what were these groups protecting and from whom were they defending themselves? How large were their populations? Were they practicing irrigation, and was irrigation a stimulus to the development of social inequality, as Wittfogel had suggested for the development of the state?¹⁸³ If irrigation was not the basis for generating differences in power or status, how did some communities acquire long-distance exchange goods? While many of these questions are still debated, investigations drawing on anthracological, palynological, carpological, and faunal data indicate that less arid conditions characterized the southeast than today.¹⁸⁴ Nonetheless, the environmental constraints of a Mediterranean zone, such as the precarities associated with dry-farming, must have been addressed through technological and social means. Diverse understandings of the sociopolitical landscape of the southeast are in play.

Some scholars argue that the evidence points to a chiefdom, a ranked hierarchical organization, or ranked villages.¹⁸⁵ Consistent with this thinking, Díaz-del-Río posits that society must be viewed within a framework of factional competition led by emergent lineages that were able to mobilize a surplus workforce to invest in collective monumental architecture, yet lacked stable political institutions.¹⁸⁶ Others see a tributary state-like polity with social classes based on coercion.¹⁸⁷ A third model interprets the sites as indicators of a more fluid social landscape, with part-time complementary production, and divided into corporate groups of different size, without evidence of economic exploitation within or between them.¹⁸⁸

Changes occurred in the location and architecture of settlements between the mid-fourth and mid-third millennia cal BCE, although the evidence is less clear for the fourth millennium BCE.¹⁸⁹ Late Neolithic peoples continued to use caves for occupation or storage, such as Nerja, where a storage silo for barley (*H. vulgare*) and wheat, as well as wild olives and acorns was found.¹⁹⁰ Open-air sites with ephemeral architecture, such as Cuatillas¹⁹¹ and Almizaraque,¹⁹² are also known. Material culture associated with these settlements includes plain ceramics, shell bracelets, stone beads, stone axes, and arrowheads.

Beginning in the third millennium cal BCE, the number of settlements in southeast Iberia increased, with the majority of Neolithic settlements abandoned.¹⁹³ This trend began ca. 3,300 cal BCE and lasted up to ca. 2,800–2,500 cal BCE. The largest communities lived in walled enclosures situated at the foothills of sierras or on low spurs along watercourses, such as Las Pilas¹⁹⁴ and Los Millares,¹⁹⁵ or on low elevations surrounded by alluvial plains, such as Almizaraque.¹⁹⁶ As noted, Los Millares is an extraordinary site, which was

strategically located at the confluence of the Rambla de Huechar and Andarax River and occupied between 3,200 and 2,200 cal BCE (Plate 6). During the site's maximum extent, it covered over 5 ha and was enclosed by four fortification walls with eighteen bastions, all built using the local limestone. Beginning ca. 2,500 cal BCE, each wall, with the exception of the inner citadel, had been abandoned. After that point, thirteen *fortines* – which may have been smaller settlements (less than 0.5 ha) – were constructed around the hill.¹⁹⁷ Los Millares had features associated with craft production (flint tools, copper metallurgy) and domestic activities (grinding of grains and storage, consumption of plant and animal domesticates).¹⁹⁸ One of the most distinctive features of the site is its cemetery, which is made up of eighty tholos tombs that extend over 13 ha on the western site of the hill (Figure 5.16).¹⁹⁹ Despite its impressive extent, however, Diaz-del-Rio²⁰⁰ points to the site's palimpsest quality and highlights the difficulty of making population estimates for a contemporary community.

Most settlements were much more modest in extent and architectural complexity than Los Millares. Ciavieja, situated on a coastal plain and currently ca. 5 km from the coast, was one of these smaller farmsteads.²⁰¹ Its subsistence base was primarily cereal agriculture, as the abundant grinding stones, and remains of wheat and fava, attest. People lived on this slightly raised hill during the pre-Beaker and Beaker periods. Beneath the city of Lorca are the archaeological remains of another of these settlements.²⁰² Silos filled with ceramics, lithics, and animal bones provide a vivid glimpse of the domestic lives of the site's inhabitants. Further inland is the small walled settlement of Cabezo de la Cueva del Plomo, with an area of approximately 0.35 ha.²⁰³

Within the walls of these settlements, peoples lived in round houses that were made from stone or dug-out foundations and wattle-and-daub or mud walls. Domestic structures were found at Las Pilas,²⁰⁴ El Malagón,²⁰⁵ and Los Millares – in both the main settlement²⁰⁶ and Fortín 1.²⁰⁷ Ditched enclosures have not been found in the southeast; Marroquíes Bajos is the easternmost example.²⁰⁸ The infilling of Ditch 4 at the site was completed ca. 2,110–1,790 cal BCE, according to Bayesian modelling, making it the latest ditched enclosure known.²⁰⁹

Chalcolithic communities in the southeast subsisted on an agropastoral economy, as did their neighbors to the north and west. Naked wheat (*T. aestivum/durum*) and barley (*H. vulgare* ssp. *nudum*) were the primary plants they cultivated, while cattle, sheep, goat, and pigs constituted their primary animal domesticates. At Los Millares, over 27,000 faunal remains (wild and domestic) were found; they were made up of primarily ovicaprids, *Sus domesticus* and *Bos taurus*.²¹⁰ Separate zones for the processing of cattle were identified, although their meat appears to have been shared throughout the community. At Las Pilas, remains of fruit and seeds of different varieties of barley and wheat, with the dominant form being naked wheat and barley.



Figure 5.16 Los Millares plan.

From: Molina and Cámara 2005; courtesy: Consejería de Cultura, Junta de Andalucía/GEPRAN-Universidad de Granada

Olive seeds were also found, but it is difficult to know with certainty whether these are wild or domestic.²¹¹ Most of the domestic plants found at Las Pilas were recovered at other sites in the southeast, such as El Malagón, Campos, Los Millares, and Almizaraque. Wild plants collected by the inhabitants of Las Pilas included acorn, lentil, esparto, grape, olive, linen, and possibly millet. Millet is cultivated in semiarid/arid conditions and is more often found on Bronze Age sites. However, only one millet seed was found at Las Pilas, and, thus, it was probably not an important food source for humans or animals at the site. At the site, the botanical evidence suggests that dry farming, using rainwater, was the basis for food production. A synthesis of the isotopic evidence from sites in eastern Spain points to a model of dry farming for cereals and horticulture in smaller plots for pulses during the Chalcolithic.²¹²

Early debates about the agricultural economy of the Southeast pitted two opposing standpoints: 1) the climate in the third millennium cal BCE was as it is now – arid – and that irrigation was employed (thus, triggering the emergence of social inequality),²¹³ and 2) the climate then was more humid than it is now, and that irrigation was not needed.²¹⁴ The current evidence points to a slightly more humid climate then than now, and little archaeological evidence for irrigation.²¹⁵

The agricultural economy supported a range of productive activities, some involving highly skilled and likely specialist artisans. Nevertheless, most goods were made from local raw materials and, most likely, by part-time specialists.²¹⁶ Most of the objects produced were involved in agricultural production and included polished stone tools (axes and adzes), grinding stones, and flaked blades. Lithics were also used as burial offerings. Most stone tools from the burials at Los Millares were derived from local sources.²¹⁷ Polished stone axes were made from a variety of metamorphic rocks, such as amphibolite and serpentinite derived from outcrops in the vicinity, as well as occasionally fibrolite, whose nearest source is at Hoyazo de Níjar. In contrast, large pressure-flaked blades were made from flint that came from more distant sources in the Sub-Betic Mountains and were likely the result of specialized production (Figure 5.17).²¹⁸ Objects were also fashioned from the bones of cattle, ovicaprids, deer, and pigs.²¹⁹ At El Malagón, Los Millares, and Los Castillejos, deer tibia were made into points (a practice that continued into the Bronze Age) as were *Sus* fibulae.

These traces of long-distance connections provide glimpses into a time when groups living in the Iberian Peninsula came to be increasingly part of large interregional interaction spheres. Schuhmacher and Banerjee have suggested that the southeast, and particularly Los Millares, was a hub for the consumption of objects made from ivory derived from African and Asiatic elephants.²²⁰ There, ivory was made into special objects, such as eyed idols.

The nature of metallurgical specialization and the social value of copper goods during the third millennium cal BCE are also hotly debated.²²¹



Figure 5.17 Large blades from Los Millares.

Courtesy: A. Morgado

Almizaraque, with one of the largest sets of metallurgical finds from any site in the region, is a focus of these discussions.²²² Smelting and melting of arsenical copper have recently been characterized as low-scale, relatively inefficient, and weakly specialized activities, performed simultaneously with daily chores and collaborative tasks, such as cereal roasting.²²³ Recent analyses of the *chaîne opératoire* of copper metallurgy, as at the workshop at Las Pilas, have also been important in elucidating the nature of metallurgical specialization. Unlike other regions of Europe and southwest Asia, early copper objects in Iberia were primarily tools and weapons, and not personal adornments.²²⁴ However, they are relatively rare, and, thus, their ability to transform economic lifeways or political relationships seems difficult to support. Nonetheless, a new technology, such as metallurgy, must have contributed to shaping the social world of Iberians in the third millennium BCE, by creating new social identities for those who had access to the raw materials and finished products and for those who had the knowledge to process them.

Although lacking the massive megaliths of the southwest, the tombs of the Southeast have been an important source of information on lifeways and chronologies. This is because human remains are generally well-preserved in the alkaline soils of the southeast. Based on the Sirets' excavations, the Leisners established the foundation for early chronological studies of burial architecture in the southeast.²²⁵ They proposed that the *rundgräber* (round graves, or megalithic tombs of circular plan without corridor) were the earliest tombs and that they dated to the Almería culture. Passage graves and tholoi were argued to date to a later, Chalcolithic era. As with all megalithic tombs, however, dating is a challenge, particularly because of their long histories of use. Furthermore, relying on material culture for their dating is problematic, given that individuals were placed in these tombs without grave goods. Radiometric dating of tombs, such as Qurénima and tombs 8–11 from the cemetery of El Barranquete, show that some bodies were buried without grave goods (or at least, none that remain).²²⁶ The cemetery of El Barranquete was made up of at least seventeen tholoi (or corbelled tombs/*falso cupula*) along a 3 km stretch of the *rambla* de Morales, of which eleven were excavated between 1968 and 1971.²²⁷ The direct dating of human remains is, therefore, the best way to trace the history of a tomb. Toward this end, a major radiometric study and Bayesian analysis was conducted of a sample of the human remains found in twenty-seven megalithic tombs of different typologies of the Grupo Purchena – a set of tombs excavated by the Sirets. The necropoli included in the study were Las Churuletas, La Atalaya, and El Llano del Jautón. A number of conclusions were reached. First, tomb use was shown to begin ca. 3,730–3,650 cal BCE. Intriguingly, there was no significant difference between the earliest dates of the *rundgräber* and those of the passage graves. Grave construction and use intensified during the third millennium cal BCE, in tandem with increased populations as discerned by the settlement evidence. Use of the *rundgräber*, however, seems to have ceased ca. 2,650–2,505 cal BCE, while passage graves continued to be used until 2,395–2,270 cal BCE. It was also found that the tholoi at El Barranquete, after initial use between 3,260 and 2,925 cal BCE, were used through the end of the second millennium cal BCE into the Bronze Age, with a hiatus ca. 1,500 cal BCE.²²⁸ This biography is common among tholoi of the southeast.²²⁹ The continued use of these collective tombs during the Argaric has been interpreted by Aranda as acts of resistance against the hegemonic structures that fostered social differentiation during the Argaric.²³⁰ Bayesian statistics have provided more nuanced readings of the use of individual tombs in necropoli. For example, the necropolis of Panoría, made up of at least nineteen dolmens of diverse typologies, was in active use for over a millennium.²³¹ However, individual tombs experienced different biographies. For example, Tomb 10 appears to have been used within two short periods (perhaps just a few decades each) within the period spanning 2,605–2,490 and 2,190–1,950 cal BCE. The large dating gaps between the

earliest burials of Tombs 7 (3,500–3,340 cal BCE) and those of Tomb 8 (3,090–2,900 cal BCE) and Tomb 6 (3,030–2,900 cal BCE) force us to consider the possibility that different social groups used this space as the resting place for their dead. They also provoke the question regarding how the memory of these spaces was maintained over such a vast time.

At death, people of the southeast were treated in a variety of ways.²³² Some were housed in communal tombs outside settlements and provided with prestige goods, such as those made from ostrich shells, as well as more commonly found objects, such as beads, polished stone tools, and flint blades.²³³ Offerings of animals, such as cattle, sheep, goat, and pigs, also accompanied mortuary rituals. Other individuals, however, were interred in graves that likely represent a small community, such as the cave at Camino del Molino.²³⁴ There, over 1,300 individuals were interred over a period of 350 years and likely lived in a small farmstead 400 m away. Within tombs, such as El Barranquete, there does not seem to be any spatial segregation of individuals by age or sex.²³⁵ Infants, however, are underrepresented – which may be due to both taphonomic reasons (poor preservation) as well as cultural practices. As in the southwest, bodies were treated to a range of ritual practices, which are often difficult to perceive given the long histories of the tombs, the intentional movement of bodies, as well as their displacement due to decomposition. In general, bodies underwent primary burials, although some were later manipulated. At Tomb 10, at Panoría, a number of individuals were found in articulated or semiarticulated positions, although the majority of remains were dispersed and disarticulated.²³⁶ Of those skeletons that were articulated, it appears that the primary position of the deceased was lateral decubitus, flexed, with the body resting on either the right or left side. Some bodies at El Barranquete and at Los Millares were burned.²³⁷ At El Barranquete, the long bones and crania of some individuals were also gathered and placed along the chamber walls. Burning often took place inside tombs as evidenced by ash layers within the tombs.

Bioarchaeological studies have provided important insights. At El Barranquete, instances of degenerative pathologies (osteoarthritis) and dental pathologies, such as calculus, were the most common pathologies detected. Interestingly, the population had a low incidence of caries – 2.5 percent.²³⁸ A study of the remains found in tombs excavated by the Sirets at Los Millares revealed an MNI of 161, representing all ages, and a similar array of diseases.²³⁹ These include osteoarthritis, cribra orbitalia (in both adults and subadults), and a possible case of brucellosis. Isotopic analyses of a sample of twelve individuals buried at Los Millares (tombs 55, 57, 74, and 63) were conducted, in part, to assess the level of inequality that might have existed among the burial population given the disparities in the luxury goods found among the tombs.²⁴⁰ A particularly rich and diverse array of goods (such as hundreds of ostrich eggshell beads), jet, amber, ivory, and copper items were found in tombs

40 and 12.²⁴¹ The isotopic study revealed that the diet of these individuals was primarily made up of terrestrial proteins, although there was marked heterogeneity in protein sources and plant intake between them. Whether these dietary differences were shaped by social distinctions is uncertain.

Evidence for violent conflict is ambiguous. Direct evidence of trauma (such as injuries on human remains) is rare. Despite this, some archaeologists argue that the fortifications and defensive architecture of settlements, such as Los Millares, point to a landscape of conflict.²⁴²

The East and Northeast

This large region, spanning the Levantine coast and northeast Iberia, engaged in diverse cultural practices with strong links to Neolithic lifeways. They maintained continuities in subsistence practices, technology, burial patterns (in caves and rock-shelters, para-megaliths, *hypogea*, pits, etc.), and settlements (small open-air sites and caves).²⁴³ Copper is not found until the Beaker phase, ca. 2,400 cal BCE, and, for this reason, this period is generally referred to as the Late Neolithic rather than the Chalcolithic.²⁴⁴

The earliest metal objects in the northeast were rare imports of finished goods from south France and west Switzerland and found as burial goods.²⁴⁵ These were gold beads, copper beads and breastplates, and copper tools and weapons (awls, axes, daggers). There is no evidence for local metallurgy, such as mining or metallurgical by-products, at this time. The acquisition of gold and copper objects did not apparently trigger any social transformations nor came with the knowledge associated with their production. The most significant change that occurred in northeast Iberia was the cessation of trade along the western Mediterranean, which, during the Middle Neolithic, had brought obsidian, jadeite, and other stone items to some communities. New exchange networks involving new raw materials, such as flint, emerged.²⁴⁶ Groups in northeast Iberia produced ceramics similar to those used in south France.²⁴⁷ These included lugged, sack-shaped vessels with smooth parallel cordons (Figure 5.18).²⁴⁸

Few settlements have been identified in eastern Iberia, but those known are open-air sites. At La Torreta-El Monastil, situated on a low terrace along the Rio Vinalopó, excavators identified sixteen structures, including part of a ditch and storage silos in which ceramics and lithics were found.²⁴⁹ Niuwet is made up of a habitation and underground pits. Les Jovades is mainly made up of storage pits.²⁵⁰ The settlement of Ereta del Pedregal also produced evidence for domestic cultic practices, such as the ornately engraved deer antler,²⁵¹ with ocular and geometric imagery evocative of the engraved plaques and other idols of southwest Iberia (Figure 5.19). This is an unusual find as the majority of these idols are found in funerary contexts.

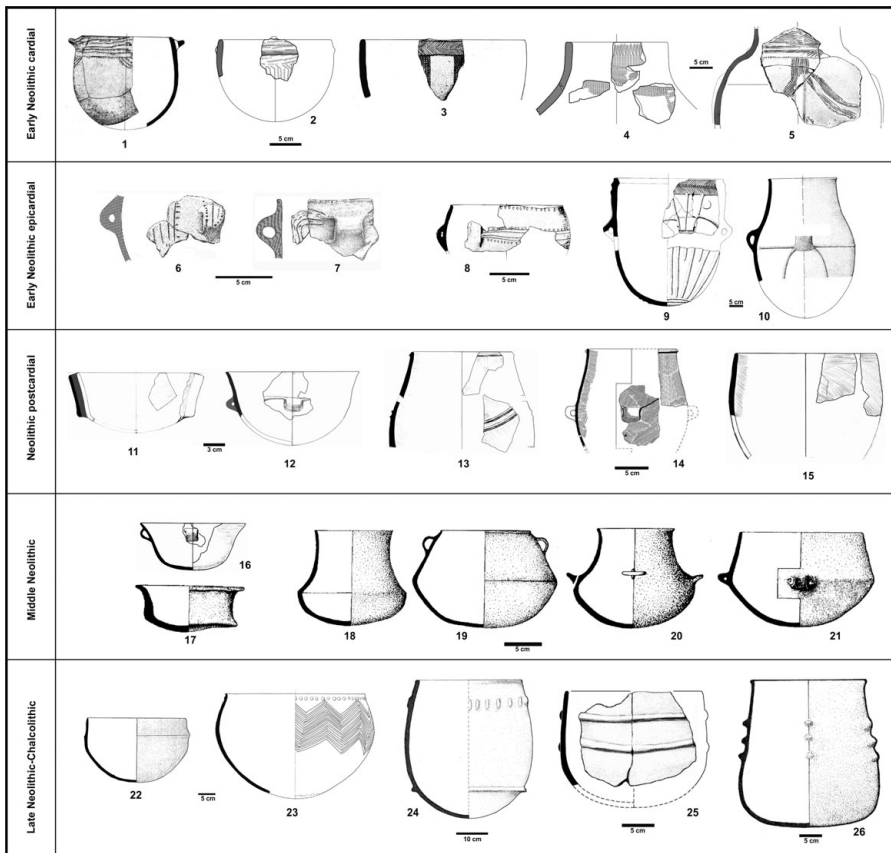


Figure 5.18 Neolithic ceramics from northeast Iberia.

Courtesy: X. Oms

Further to the north, in Catalonia, Late Neolithic groups lived in lowland open-air settlements and caves near rivers or other bodies of water. The open-air sites, such as La Prunera,²⁵² are typically made up of silos and combustion structures and associated with the bones of cattle, sheep, and goats. During the Late Neolithic, people generally abandoned the larger habitation sites and cemeteries they used during the Middle Neolithic. One exception is the village of Ca n'Isach.²⁵³ There, occupation continued, although the Late Neolithic phase (3,400–2,700 cal BCE), which was associated with a large oval hut and ceramics, was less extensive than that of the Middle Neolithic (3,900–3,400 cal BCE). No ditched enclosures have yet been discovered in Catalonia, as in southern Iberia, despite the fact that a great deal of CRM work has been carried out in the region. Relative to burial sites in the region, there are few radiocarbon dates for habitations. Some caves were used for stabling ovicaprids, such as Cova Colomera and Cova Gran de Santa Linya.²⁵⁴ At Cova Gran, this practice was detected through micromorphology in accumulated levels of completely or partially combusted residues. Because the evidence is



Figure 5.19 Eyed idol from Ereta del Pedregal.

Courtesy: Museu de Prehistòria de València

scarce for open-air sites and those that are known seem to be of short occupation, it is generally believed that groups in Catalonia lived as seminomadic farmers during the Late Neolithic.

Burials, as throughout the peninsula, were typically collective. In Alicante and Valencia, they tended to be in caves. In northeastern Spain, stone chambers are most common, along with caves and para-dolmens (megaliths built in conjunction with a cave or rock-shelter). In the middle Ebro Basin, tumuli, multiple burial pits, megaliths, and natural caves were used throughout the third millennium cal BCE, including during the Beaker phase. Accompanying the dead in northeast Iberia were personal adornments made from a range of raw materials, such as stone, shell, and bone, as well as large flint blades, some of whose sources are in the Apt-Forcalquier area of south France.²⁵⁵ The blades sometimes exceed 30 cm in length, but these were not simply special objects to be displayed. Rather, the majority were used intensively for harvesting grains

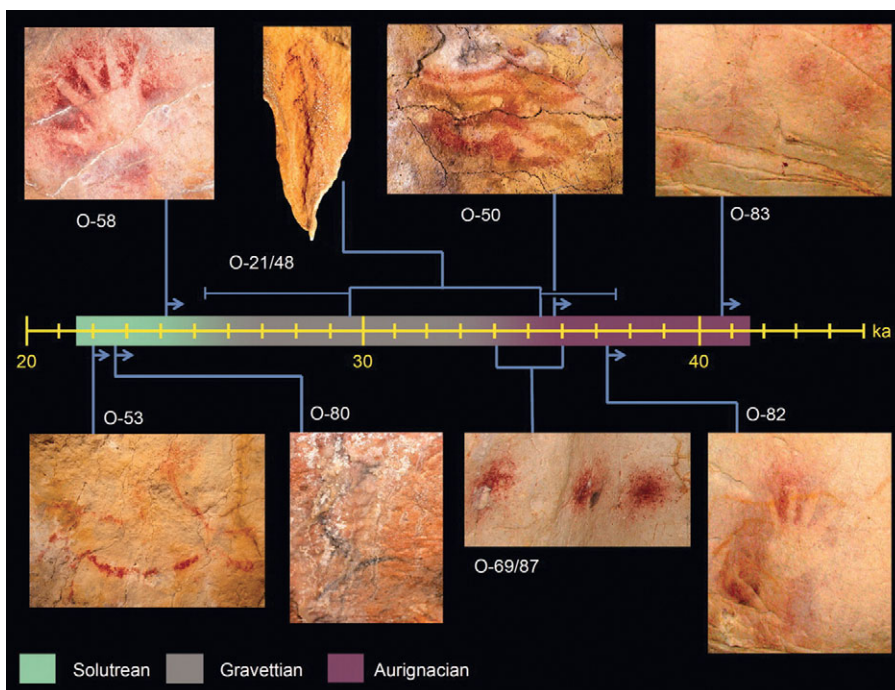


Plate 1 Red disk (O-83) and hand stencil (O-82) from El Castillo.
 From: Pike *et al.* 2012, fig. 3.



Plate 2 Ekain, horse paintings.
Photo: Gonzalo Azumendi.

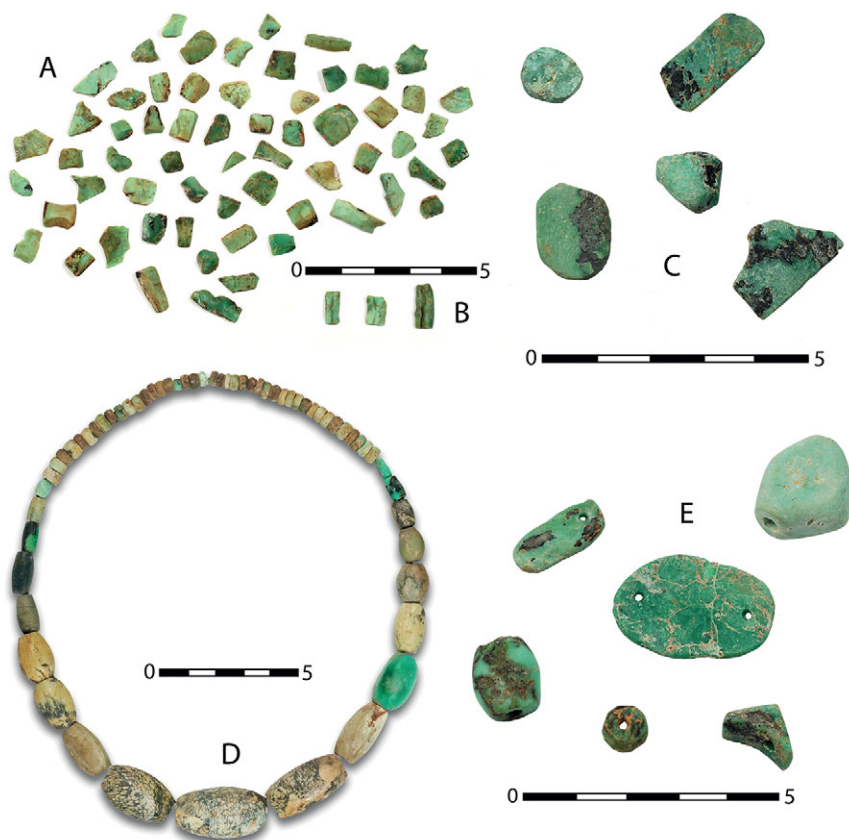


Plate 3 Gavà variscite.

Photos: B. Solina and J. Casanova/Museu de Gavà; from Borrell *et al.* 2015.



Plate 4 Antelas, and painting within chamber.
Photo: Rodrigo de Balbín-Behrmann.



Plate 5 Arrowheads from Montelirio.

Photo: Miguel Ángel Blanco de la Rubia; courtesy: the Research Group ATLAS, University of Seville.



Plate 6 Los Millares aerial view. Confluence of the Andarax Valley with the Rambla de Huéchar and Los Millares; with the settlement in the foreground, and the cemetery in the back.

From: Paisajes Españoles/GEPRAN-Universidad de Granada.



Plate 7 Gold biconvex bead from Cau del Tossal Gros (Girona).
From: Soriano Llopis *et al.* 2012: fig. 3.



Plate 8 Beaker ceramics and associated material culture – Fuente Olmedo.
Photo: Museo de Valladolid.

as well as hide-working and animal butchery, based on use-wear studies. Some were so worn that their edge was rounded. This pattern is in contrast to the long blades found in tombs in Valencia and Andalucia, which tend to be unused. Differences in their frequency by tomb type have been noted in the northeast. In megaliths, blades tend to be found in small numbers (one or, less frequently, two to four), while in caves, they are found in high frequency (the 126 blades known from caves or rock-shelters come from just seven sites). These differences may suggest something about the nature of the population buried in different tomb types, or may reflect chronology, as the tombs date through the late third and early second millennia cal BCE.

One of the most important Late Neolithic burials in east Mediterranean Iberia is Cova de la Pastora.²⁵⁶ Vicente Pascual Pérez (1917–1976) first excavated this rich site in the 1940s, and it quickly attracted wide attention with its early examples of trepanation.²⁵⁷ Subsequent investigations and a large series of AMS dates demonstrate the long history of this large cave (13 × 5 m), which began in the Late Neolithic (3,800 cal BCE), continued into the late third millennium cal BCE, and experienced sporadic use through the Roman and later periods. A minimum number of fifty-nine individuals, including adults and subadults, were buried at Pastora. They were accompanied by diverse grave goods, which included sixty-five flint blades.²⁵⁸ Some blades were quite large (15–25 cm) and made from nonlocal raw materials. The larger and unbroken blades tended to be unused (as with large blades found in tombs in Andalucia, but in contrast to those in contemporary burials to the north, in Catalonia, as noted earlier). Diachronic studies of stable isotopes were conducted on the human remains to discern whether there were statistically significant differences in mean $d^{13}C$ and $d^{15}N$ between men and women. No significant differences over time or by sex were discerned, although there was variation by individuals. These results suggest that social differences were marked by the location and possibly the rituals associated with the dead. The individuals sampled consumed a completely terrestrial diet. Cribra orbitalia was found on 22 percent of the crania (which include all ages), which suggests that the population as a whole suffered nutritional stress in the form of lack of iron, some other vitamin deficiency, or gastrointestinal infections. In addition to the cases of trepanation, other skulls showed evidence of cranial abrasion with bone regeneration, indicating that the individuals survived the procedure. Intriguingly, all the trepanations and abrasions were conducted on adult males, which is a pattern found at other contemporary sites in the Iberian Peninsula.²⁵⁹

Overlooking the plain of Torrella de Montgrí is the para-dolmen (or *cueva-dolmen*) of Cau del Tossal Gros. Pericot first excavated the site in 1923 as part of his doctoral research, although it had long been known to herders and hunters in the region, as well as treasure hunters.²⁶⁰ It was clear to Pericot that the large stones at the entrance of the cave were the remains of a dolmen. More than

5,100 fragments of human remains were recovered, which were made up of a minimum number of thirty-one individuals, including adults, adolescents, and children. The disposition of the remains appears to have been the result of successive inhumations placed uncovered on the surface of the cave, which was the typical practice in the region.²⁶¹ Grave goods include a large (18.5 cm) flint blade, a bone awl, polished stone axes, and gold biconvex bead (Plate 7). The bead is the oldest gold bead to date in Iberia (3,450 cal BCE).²⁶² The gold was very pure, with less than 2 percent silver. This is a composition of native gold typically found in alluvial deposits. The piece was made by joining two sheets of gold through burnishing, which is a technically complex process. In Catalonia, these gold items predate copper objects. Gold objects are more common beginning in the Beaker period.

In 2011, during the construction of the station for the high-speed rail line of Sagrera in Barcelona, a hypogeum (known as La Sagrera) carved directly into the bedrock was discovered with the remains of least 207 individuals.²⁶³ During its first phase of use (2,861–2,713 cal BCE), a series of bodies were inhumed sequentially, with grave goods of ceramics and beads. During a second phase (2,883–2,461 cal BCE), a large number of individuals (more than 100) were buried at the same time; few grave goods were found with these individuals. Given the lack of weaponry or signs of traumatic injuries, it appears that the people of this phase died from an epidemic. At the end of the site's use, an individual was buried.

Selective manipulation of skeletal elements was discovered at the burial cave of Cau d'en Calvet.²⁶⁴ There, at least forty-three people were buried; thirty-three of whom were adults, with the rest being children. A number of crania and long bones of these individuals were arranged. Some of the crania had incisions (short and superficial) produced by lithic tools, which may be related to removal of the scalp from the skull.

The Interior

The Iberian interior is vast area, and the archaeological record suggests that a division can be made between the northern and southern Meseta for this time. According to radiocalibrated curves, demographic activity increased steadily throughout the Meseta from 3,000 cal BCE, with a sharp rise during the Beaker phase, during the second half of the third millennium BCE.²⁶⁵

NORTHERN MESETA

In the Northern Meseta, two cultural areas can be discerned, each with distinctive material practices, which likely reflect different forms of social organization: the west (along the Duero) and east (Upper Ebro).²⁶⁶



Figure 5.20 El Pedroso.

Courtesy: L. B. Alves

Groups in the western region lived in stone-walled and ditched settlements and buried their dead in tumuli, pits, and caves. They appear to have engaged in exchange or had contact with communities to the south, as ceramic vessels with eye motifs and concave-based flint arrowheads are sometimes found. They occupied small, scattered open-air farmsteads in huts with central hearths and pits, near granitic boulders, such as Aldeagordillo,²⁶⁷ and others on fluvial banks, such as Fuente Celada.²⁶⁸ As in the southwest, ditched enclosures are also known, such as Las Pozas and El Casetón de la Era.²⁶⁹ Settlements are abundant in the fertile plains of the Ribera del Duero²⁷⁰ and Amblés Valley.²⁷¹

Typical ceramics of these northern Meseta groups were of closed form, burnished, and decorated with incised and combed impressions. Flint, variscite, and copper were exchanged.²⁷² Production sites are known, such as the variscite workshop at Las Peñas de Quiruelas.²⁷³

Investigations at El Pedroso illustrate the complex and close relationship between domestic and ritual activities of sites in the region and the value of a landscape approach. El Pedroso is situated on an isolated granite hill (elevation: 769 m above sea level) overlooking the Rio Manzanas (Figure 5.20). On the hill, archaeologists identified a hillfort and two decorated caves dating to the third millennium cal BCE.²⁷⁴ The hillfort was made up of two discontinuous walls, a rampart, several towers, and circular houses. Evidence for the manufacture of quartz and slate arrowheads and amphibolite axes was found. On the southeast side of the hill, in what appears to be a granitic tor, is a cave made up of two chambers engraved with schematic art and enclosed by a stone wall/terrace. The excavators designated it a sanctuary. Inside the cave were found ceramics, quartz and slate tools (made by bipolar flaking), burnt daub, querns, and some copper items, including a Palmela point dating to the Beaker period. The walls of the two chambers were decorated in different styles: the

outermost one had cup marks and was separated by a tunnel from the innermost chamber, which was elaborately engraved with images that included human figures. Another decorated cave was also found on the hill, which had cup marks and was also surrounded by a stone enclosure, but it has not been studied because it is difficult to access. Although the hillfort and sanctuary cave were dated to the mid-third millennium cal BCE, their use extended into the late third millennium cal BCE/Beaker period as well, with some images on the cave walls (personal names, years, Christian crosses) indicating its use over a long period of time.

The archaeological evidence for the eastern sector of the northern Meseta (Ebro Valley) suggests that people engaged in different exchange networks, which involved green talc beads, and produced pottery of different styles. However, the settlement record is poorly understood.²⁷⁵ Burials took the form of smaller tumuli, caves and rock-shelters, and hypogea.

The most striking evidence for collective violence was found in the northern Meseta. This is somewhat perplexing given that the most dramatic evidence for social inequality – at least in terms of monumental labor and long-distance exchange – is found in southern Iberia. The rock-shelter of San Juan ante Portam Latinam provides a particularly graphic case study.²⁷⁶ In 1985, while construction was underway to enlarge a road between vineyards, an excavator revealed a “montón de ‘calaveras’ y huesos.”²⁷⁷ After a salvage excavation was initiated, the remains of at least 338 people were found, the majority of which were articulated. The burial population included nonadults (201) and adults (137), and males (107) and females (46). Approximately a third of the individuals were subadults, and they included fetuses and neonates. A number of the individuals (eleven) showed signs of trauma resulting from arrowheads (this was not found in women and children). Some arrowheads were lodged in bones. Artifacts found with the dead include flint arrowheads and objects of adornment, but little fauna; the excavators do not see these objects as grave offerings. The near contemporaneity of the dates (the last third of the fourth millennium cal BCE), which were obtained from bones found at different depths and in different areas, suggests that the individuals died from one or more violent encounters over a short span of time. That these dead were housed in a rock-shelter despite the predominance of megalithic tombs in the region may further support an ad hoc or unusual event/s as structuring their burial at the site.²⁷⁸

Other sites in the region also housed individuals who display signs of injury and trauma, although none appear to be the result of a catastrophic burial event, such as San Juan de Portam Latinam. At the rock-shelter of Las Yurdinas, two individuals (out of an MNI of 90) were found with a projectile embedded in their bones.²⁷⁹ Both also showed signs of healing. Other lesions were discerned on other individuals, including blunt force trauma on a cranium. At the artificial semiunderground hypogeum at Longar, four individuals were found wounded

by arrowheads.²⁸⁰ At the rock-shelter burial of La Peña de Marañón, where at least twenty-eight individuals were buried, one person was found with an arrowhead embedded in their foot.²⁸¹ The foot appears to have healed.

A study conducted on Late Neolithic–Early Chalcolithic burials in the Middle Ebro region (Rioja Alavesa area) attempted to discern whether contemporary (3,500–2,900 cal BCE) burial populations in caves and in megaliths had different isotopic signatures that might suggest they housed different social groups with distinctive dietary practices.²⁸² Given the representation of all skeletal elements in both tomb types, it does not appear that they were used in different stages in the mortuary ritual. The results of this study, on 166 individuals associated with seven burial sites, suggest significant differences between populations buried in megaliths and in caves. There were significant differences in $\delta^{13}\text{C}$ values in cave and megalith populations, and in $\delta^{15}\text{N}$ values between adults and subadults. These results point to a process of social differentiation during the late fourth millennium cal BCE that translated into different diets even among individuals at a young age.

Analysis of the demographics represented in megalithic tombs from the La Rioja region points to selective burial.²⁸³ For the Late Neolithic and Early Chalcolithic site of Alto de la Huesera, adult males seem to be overly represented, relative to women.

It is possible that these acts of violence were related to people and goods traveling through the Ebro river valley. Given its strategic location – providing social and economic links to the Mediterranean, the Iberian interior, and the north, it may be that the river was a stage on which encounters of diverse peoples took place.

SOUTHERN MESETA

Less is known about the southern Meseta, although recent investigations have begun to change this picture.²⁸⁴ Communities appear to have been connected to others in southern Iberia, given their common material culture, such as ceramics with *bordos almendrados* (almond-shaped rims), bone eyed idols, and use of ivory, amber, and cinnabar.²⁸⁵ The Tagus likely provided a corridor of contact and communication. Household production (pottery, lithics, metallurgy) was small in scale.²⁸⁶ In addition to small farmsteads are larger ditched enclosures, such as Camino de las Yeseras.²⁸⁷ Some open-air sites, such as Los Barruecos and Cerro de la Horca,²⁸⁸ were places of both domestic and mortuary activities.²⁸⁹

SOME CONCLUSIONS

Profound changes have taken place in our understanding of the late fourth/early third millennium cal BCE. Until the last few decades, the typical settlement was thought to be the fortified hilltop site. These settlements were

found primarily in the river valleys of the Estremadura and southeast Spain, and included Zambujal, Leceia, and Los Millares. Other regions, such as the Alentejo, appeared to lack settlements and were only occupied by the dead. This picture changed in the 1980s when archaeologists discovered ditched enclosures and other sites with negative structures along the Guadiana and Guadalquivir Rivers and in the Meseta.²⁹⁰ In 1996 only five ditched enclosures were known, but, since then, over thirty new sites have been discovered, often using remote sensing, as part of research projects, agricultural expansion, and mitigation work, such as for the Alqueva Dam. Ditched enclosures confound traditional classifications that distinguish between settlement and mortuary sites, as both productive and mortuary activities are in evidence. Ditched enclosures have not only transformed archaeological understanding of the social landscape, they have challenged archaeologists to address new questions about their function, their relationship to each other and fortified sites, their chronology, and the causes of their abandonment. Some scholars have questioned the monolithic designation of these sites as settlements and suggest that their symbolic and phenomenological qualities be addressed, such as how they structured vision and visibility, constrained human actions, and delimited space.²⁹¹

A second factor in the transformation of archaeological understanding of this period has been new excavations of and bioarchaeological studies at funerary sites, including analyses of old collections.²⁹² These investigations have revealed a highly variegated picture of funerary and symbolic practices and generated new insights into lifeways and deathways, including health and disease, diet, biological affinity and ancestry, violence, and mobility patterns. This research has been particularly informative as the collective burial practices and commingling of human remains present a picture of social homogeneity and egalitarianism that has stood in contrast to the pronounced indicators of social difference from settlements (craft specialization, long-distance exchange) and monumental burial constructions, fortification, and ditches.

ENDNOTES

- 1 Portions of this chapter are drawn from Blanco *et al.* 2018.
- 2 Senna-Martínez 1995; Senna-Martínez *et al.* 1997. For the region, the period between 3,100 and 2,400 cal BCE is sometimes referred to as the Late Neolithic (Prieto Martínez and Lantes Suárez 2017), although archaeologists also use the Chalcolithic designation, since copper has been found at some sites (Jorge 1986). For general references, see Fábregas Valcarce and Ruíz-Gálvez Priego 1997; Lopes and Bettencourt 2017.
- 3 Savory 1968.
- 4 López Cuevillas 1959:54.
- 5 Jorge *et al.* 2002; Bonilla Rodríguez *et al.* 2006.

- 6 Prieto Martínez and Lantes Suárez 2017.
- 7 Cardozo 1968; Silva and Santos 1988/1989; Martins 1989.
- 8 de la Peña Santos 1984; Gómez Fernández *et al.* 2001.
- 9 de Jesus Sanches 1997; Comendador 1999; Prieto Martínez 2001; Ontañón Peredo 2003.
- 10 Prieto Martínez and Lantes Suárez 2017.
- 11 Jorge *et al.* 2013.
- 12 Jorge *et al.* 2002, 2003.
- 13 Jorge and Rubinos 2002; Jorge 2005; McFadyen 2016.
- 14 de Jesus Sanches 2003, 2008.
- 15 Valera 1997, 2007.
- 16 da Fonseca Sousa Pereira 1999.
- 17 Cardoso and Costa 2004.
- 18 Ramil Rego and Aira Rodríguez 1993; de Jesus Sanches 1997, 2016a:100–101.
- 19 de Jesus Sanches 2016b.
- 20 Rovira and Gutiérrez 2003.
- 21 de Jesus Sanches *et al.* 2016b.
- 22 Criado Boado *et al.* 1991.
- 23 Carballo Arceo *et al.* 1998.
- 24 Bonilla Rodríguez *et al.* 2006; Fábregas Valcarce *et al.* 2007.
- 25 Gianotti *et al.* 2011.
- 26 Rodríguez-Rellán and Fábregas Valcarce 2015.
- 27 Ontañón Peredo 1995, 2003.
- 28 Beguiristain 1990.
- 29 Sesma *et al.* 2009:152–154.
- 30 Ontañón Peredo 2002a.
- 31 Ortiz Tudanza 1990.
- 32 de Jesus Sanches 1997; Ontañón Peredo 2003; Arias Cabal and Ontañón Peredo 2012.
- 33 For general references, see: Twohig 1981; Fábregas Valcarce 1988; Criado Boado and Fábregas Valcarce 1989; Kalb 1989; Jorge 1992.
- 34 Jorge 1980, 1995b.
- 35 Silva 1995.
- 36 Infante Roura *et al.* 1990; Vaquero Lastres 1990; Bradley *et al.* 1994; Alves and Reis 2017.
- 37 Peña Santos and Vázquez Varela 1979; García Alén and Peña Santos 1980.
- 38 Alves 2014:23–24.
- 39 Daveau 1980; Vis *et al.* 2008, 2010.
- 40 Murrieta-Flores 2012.
- 41 Boaventura 2011a.
- 42 Harrison and Gilman 1977.
- 43 Díaz-del-Río and García Sanjuán 2006; Cruz Berrocal *et al.* 2013.

- 44 For example, Nocete Calvo 2001, 2014.
- 45 Gilman 2001, 2013; Díaz-del-Río 2004b.
- 46 Cardoso 1994, 1997, 1999/2000, 2008, 2012.
- 47 do Paço and Sangmeister 1956; do Paço 1959; Ferreira 2003; de Carvalho Amaro 2008/2009, 2013a.
- 48 Kunst 1996.
- 49 Jalhay and do Paço 1945; Do Paço and Sangmeister 1956; Lillios 1995; Arnaud 2002; Cardoso and Ribeiro 2013.
- 50 Ferreira 2003.
- 51 Müller and Soares 2008; Pereira *et al.* 2013.
- 52 do Paço 1960.
- 53 Odriozola *et al.* 2013.
- 54 Arnaud *et al.* 2014–2015.
- 55 Sousa 2010.
- 56 Cardoso 1994, 1997, 1999/2000, 2008, 2012.
- 57 Sangmeister and Schubart 1981; Kunst 1987, 1995; Sangmeister and de la Cruz Jiménez 1995; Uerpmann and Uerpmann 2003.
- 58 Tavares da Silva and Soares 1987.
- 59 Gonçalves 1982
- 60 Soares 2013.
- 61 Gomes *et al.* 1983.
- 62 Kalb and Höck 1997.
- 63 Hurtado Pérez 2004.
- 64 Nocete Calvo *et al.* 2004.
- 65 Soares *et al.* 2007; Lull *et al.* 2015b:369–370; Valera 2015a.
- 66 Chapman 1990; Forenbaher 1999:tables 19 and 20.
- 67 Kunst 2007.
- 68 Gonçalves 1995:46–47.
- 69 Cardoso 1999/2000:331.
- 70 Lillios 2000.
- 71 Cardito Rollán 1996; Boaventura 2011a:211–212.
- 72 Müller *et al.* 2007.
- 73 Müller and Cardoso 2008.
- 74 Nocete Calvo 2006.
- 75 Müller and Soares 2008.
- 76 Gauss 2013.
- 77 Müller and Cardoso 2008:66.
- 78 Müller *et al.* 2007.
- 79 Nocete Calvo *et al.* 2008.
- 80 Gauss 2013.
- 81 Nocete Calvo *et al.* 2005; García-Alix *et al.* 2013; Martínez Cortizas *et al.* 2016.
- 82 Kunst *et al.* 2014.

- 83 Lull *et al.* 2015b:366.
84 Boaventura 2001.
85 García Sanjuán *et al.* 2016b.
86 Márquez Romero and Jiménez-Jáimez 2010, 2013; Jiménez-Jáimez 2015.
87 Valera 2014a.
88 Risch 2017:210.
89 Valera and Costa 2013.
90 Hornos Mata *et al.* 1998; Zafra de la Torre *et al.* 2003.
91 Márquez Romero and Jiménez-Jáimez 2013:450.
92 Aranda Jiménez *et al.* 2016.
93 Costa Caramé *et al.* 2010; García Sanjuán *et al.* 2017, 2018.
94 Zafra *et al.* 1999; Aranda Jiménez *et al.* 2016.
95 Hurtado Pérez 1990.
96 Valera and Filipe 2004.
97 Valera 2015a.
98 Morán 2010.
99 Díaz-del-Río 2004b.
100 Márquez Romero and Jiménez-Jáimez 2013.
101 Aranda Jiménez *et al.* 2016.
102 Valera 2015b
103 Dias *et al.* 2008; Valera *et al.* 2015.
104 García Sanjuán *et al.* 2017.
105 Chapman 1995.
106 Risch 2013.
107 Valera and Filipe 2004:31.
108 Lull *et al.* 2015b:367.
109 Valera 2015a:416.
110 Márquez-Romero and Jiménez-Jáimez 2013:453.
111 García Sanjuán *et al.* 2018.
112 Nocete Calvo *et al.* 2008.
113 Caro *et al.* 2015.
114 Escacena Carrasco and Rodríguez de Zuloaga 1988; Escacena Carrasco *et al.* 1996.
115 Valera 2017a.
116 Valera 2017a.
117 Callais, however, is a generic term for green stones, which includes variscite as well as muscovite, chlorite, and other stones, and, thus, is now avoided (Domínguez-Bella 2004).
118 Thomas 2011.
119 Odriozola *et al.* 2010.
120 Forenbaher 1998, 1999.
121 Lozano *et al.* 2010; Afonso Marrero *et al.* 2011.
122 Terradas *et al.* 2014.

- 123 Hunt-Ortiz *et al.* 2011; Domingo Sanz *et al.* 2012.
- 124 Capel *et al.* 2006.
- 125 Schuhmacher *et al.* 2009, 2013; Schuhmacher and Banerjee 2012.
- 126 Murillo-Barroso and Martínón-Torres 2012; Murillo-Barroso and García Sanjuán 2013.
- 127 Leisner and Leisner 1943, 1956, 1959; Berdichevsky Scher 1964; Leisner 1965; Kalb 1989; Valera 2012; Boaventura *et al.* 2014; Sousa 2016.
- 128 Gonçalves 1999a:90–111, fig. 4.28.
- 129 Soares 2003.
- 130 Boaventura 2009; Cardoso and Boaventura 2011.
- 131 Kalb 1996.
- 132 Boaventura 2000.
- 133 Cáceres *et al.* 2014.
- 134 Borja Barrera and Borja Barrera 2016.
- 135 Carrión Méndez *et al.* 2010; Lozano *et al.* 2014.
- 136 Boaventura 2009, 2011b.
- 137 Soares and Tavares da Silva 2010.
- 138 Fernández Flores *et al.* 2016.
- 139 Linares Catela and Mora Molina 2015.
- 140 Lozano *et al.* 2014; Rogerio-Candelera *et al.* 2018.
- 141 Carrión Méndez *et al.* 2010.
- 142 Lillios 2008.
- 143 Gonçalves 2004.
- 144 Lillios 2004a, 2004b.
- 145 García Rivero and O'Brien 2014.
- 146 Gonçalves 2013:105.
- 147 Gonçalves and Sousa 2017.
- 148 Lillios 2010.
- 149 García Sanjuán *et al.* 2018.
- 150 Weiss-Krejci 2011; Boaventura *et al.* 2014; Silva *et al.* 2015a.
- 151 Hillier *et al.* 2009.
- 152 Lillios *et al.* 2015:94–95.
- 153 Lago *et al.* 1998:79; Hurtado Pérez *et al.* 2000.
- 154 Leisner and Leisner 1943:546–547.
- 155 Boaventura *et al.* 2014.
- 156 Boaventura *et al.* 2014; Beck 2016; Silva and Ferreira 2016/2017.
- 157 Waterman 2012; Díaz-Zorita Bonilla 2013; Robles Carrasco and Díaz-Zorita Bonilla 2013; Waterman *et al.* 2014a, 2014b; Lillios *et al.* 2015; Silva *et al.* 2015a; García Sanjuán *et al.* 2016a; Pecero Espín 2016; Díaz-Zorita Bonilla 2017, Díaz-Zorita Bonilla *et al.* 2017a, 2017b; Pereira *et al.* 2017; Robles *et al.* 2017.
- 158 Waterman *et al.* 2014a, 2014b; Díaz-del-Río *et al.* 2017; Díaz-Zorita Bonilla 2017.

- 159 Díaz-Zorita Bonilla 2017.
- 160 Waterman 2012; Guiry *et al.* 2016.
- 161 Cunha 2015; Irish *et al.* 2017.
- 162 Waterman and Thomas 2011; Cunha *et al.* 2015; Beck 2016.
- 163 Emslie *et al.* 2015.
- 164 Emslie *et al.* 2016.
- 165 Díaz-Zorita Bonilla 2017; Díaz-Zorita Bonilla *et al.* 2017b.
- 166 Waterman 2012.
- 167 Silva and Cunha 2001; Waterman 2012; Silva *et al.* 2015a; Díaz-Zorita Bonilla 2017; Díaz-Zorita Bonilla *et al.* 2017a; Robles *et al.* 2017.
- 168 Díaz-Zorita Bonilla 2017.
- 169 Beck 2017.
- 170 Silva 2002; Silva and Ferreira 2008; Silva *et al.* 2012.
- 171 Silva and Marques 2010.
- 172 Gama and Cunha 2003; Silva 2003; Tomé *et al.* 2017.
- 173 Ramos Millán 2013:74.
- 174 Chapman 1981; Molina and Cámara 2005.
- 175 Siret and Siret 1887. Henri left Spain in 1886 (Herguido 1994).
- 176 Siret 1910, 1913; Chapman 1990:24.
- 177 Micó Pérez 1995.
- 178 Acosta Martínez 1976.
- 179 Bosch-Gimpera 1969.
- 180 For more detailed discussion of the early archaeology and chronology of the southeast, see Chapman 1981, 1990, 2008; Ramos Millán 1981, 2013; Pellicer Catalán 1986; Martínez Navarrete 1989; Castro Martínez *et al.* 1996.
- 181 Aranda Jiménez *et al.* 2017a:258.
- 182 Chapman 1990, 2003.
- 183 Wittfogel 1957; Gilman and Thornes 1985.
- 184 Blanco-González *et al.* 2018:
- 185 Gilman 1976, 1987, 2013; Chapman 1978, 1981, 1990; Mathers 1984; Ramos Millán 2013.
- 186 Díaz-del-Río 2004b, 2011.
- 187 Molina and Cámara 2005.
- 188 Risch 2013.
- 189 Muñoz Amilibia 1986; Ramos Millán 2013.
- 190 Hopf and Pellicer Catalán 1970; Peña-Chocarro and Zapata 2010.
- 191 Chapman 1990:64–65, 2008; Fernández-Miranda *et al.* 1993.
- 192 Delibes de Castro *et al.* 1996.
- 193 Balsera *et al.* 2015b; Lillios *et al.* 2016.
- 194 Martín Socas *et al.* 1993.
- 195 Almagro and Arribas 1963; Arribas *et al.* 1983, 1987.
- 196 Delibes de Castro *et al.* 1986.

- 197 Cara Barrionuevo and Rodríguez López 1984, 1989; Arribas *et al.* 1987; Molina and Cámara 2005; Díaz-del-Río 2011.
- 198 Molina and Cámara 2005.
- 199 Chapman 1981.
- 200 Díaz-del-Río 2011.
- 201 Carrilero and Suárez 1989–1990.
- 202 Martínez Rodríguez and Ponce 2006; Pujante 2011.
- 203 Muñoz Amilibia 1993. Small unenclosed farmsteads are also known along lowland riverways and near arable land, such as El Prado de Jumilla (Walker and Lillo 1984; Jover Maestre *et al.* 2012).
- 204 Martín *et al.* 1993.
- 205 Ramos Millán 1997.
- 206 Arribas *et al.* 1987.
- 207 Molina *et al.* 1986.
- 208 Márquez-Romero and Jiménez-Jáimez 2013.
- 209 Aranda Jiménez *et al.* 2016.
- 210 Navas *et al.* 2008.
- 211 Rovira i Buendia 2000.
- 212 Araus *et al.* 1997; Ferrio *et al.* 2005.
- 213 Gilman and Thornes 1985.
- 214 Lull 1983.
- 215 The archaeological evidence for water control during the Chalcolithic and Argaric can be found in Lull *et al.* 2015a.
- 216 Chapman 2008:202–204.
- 217 Lozano *et al.* 2010.
- 218 Morgado and Pelegrin 2012.
- 219 Altamirano García 2014.
- 220 Schuhmacher and Banerjee 2012.
- 221 Montero Ruiz 1994; Lull *et al.* 2010a; Murillo-Barroso *et al.* 2017.
- 222 Müller *et al.* 2004.
- 223 Murillo-Barroso *et al.* 2017.
- 224 Murillo-Barroso and Montero-Ruiz 2012.
- 225 Leisner and Leisner 1943.
- 226 Aranda Jiménez *et al.* 2017a, 2017b.
- 227 Almagro Gorbea 1973.
- 228 Aranda Jiménez *et al.* 2017a.
- 229 Lozano Medina and Aranda Jiménez 2017.
- 230 Aranda Jiménez 2013.
- 231 Aranda Jiménez *et al.* 2018.
- 232 Cámara Serrano 2001.
- 233 Chapman 1990.
- 234 Lomba Maurandi *et al.* 2009.
- 235 Díaz-Zorita Bonilla *et al.* 2016.

- 236 Aranda Jiménez *et al.* 2018; Díaz-Zorita Bonilla *et al.* 2017a.
237 Peña Romo 2011.
238 Díaz-Zorita Bonilla *et al.* 2016.
239 Peña Romo 2011.
240 Waterman *et al.* 2017.
241 Chapman 1981:402.
242 Cámara Serrano and Molina González 2013.
243 Maya 1992; Soler Díaz 2002; Soriano Llopis 2013; Bernabeu Aubán and
Orozco-Köhler 2014.
244 Soriano Llopis 2013; Bernabeu Aubán and Orozco-Köhler 2014.
245 Soriano Llopis 2015.
246 Daura *et al.* 2015; Oms *et al.* 2016.
247 Castro Martínez *et al.* 1996:105–109; Soriano Llopis 2013:20–21; Oms
et al. 2016.
248 Oms *et al.* 2016:300.
249 Jover Maestre *et al.* 2000/2001.
250 Bernabeu Aubán and Badal García 1992; Bernabeu Aubán 1993.
251 Fletcher Valls 1964.
252 Borrell *et al.* 2005; Alcalde *et al.* 2016.
253 Tarrús i Galter 2017.
254 Polo Díaz *et al.* 2014.
255 Gibaja Bao *et al.* 2009; Terradas *et al.* 2012; Daura Luján *et al.* 2015;
Mangado *et al.* 2016.
256 McClure *et al.* 2010, 2011.
257 Although between five and seven trepanned skulls were reported, only
four cases were found in recent studies.
258 García Puchol *et al.* 2014.
259 Campillo Valero 2007; Roca de Togores and Soler Díaz 2010.
260 Pericot and Esteva 1973.
261 Agustí and Fiego 2002.
262 Soriano Llopis *et al.* 2012; Soriano Llopis 2015.
263 Balaguer Nadal *et al.* 2013.
264 Pons i Brun 1991.
265 Blanco-González *et al.* 2018.
266 Villalobos García 2016.
267 Fabián García 2006.
268 Carmona-Ballesteros 2013.
269 Delibes de Castro *et al.* 2014, 2015.
270 Rodríguez Marcos 2007:409–415.
271 Fabián García 2006.
272 Delibes de Castro *et al.* 1995; Villalobos 2016.
273 Villalobos and Odriozola 2016.

- 274 Delibes de Castro *et al.* 1995; Bradley *et al.* 2005; Fábregas Valcarce and Rodríguez Rellán 2008; Alves *et al.* 2013.
- 275 Montes and Alday 2012.
- 276 Vegas Aramburu *et al.* 1999, 2012; Vegas Aramburu 2007; Fernández-Crespo *et al.* 2018.
- 277 Vegas Aramburu *et al.* 1999:439.
- 278 Fernández-Crespo *et al.* 2018:10. Other instances of violent trauma from sites in the Mediterranean and northern Iberia, dated between the Neolithic and Bronze Age, are summarized in Pérez Fernández (2010).
- 279 Fernández-Crespo 2017.
- 280 Armendariz *et al.* 1994; Sesma *et al.* 2009.
- 281 Fernández-Crespo 2016.
- 282 Fernández-Crespo and Schulting 2017.
- 283 Fernández-Crespo and de-la-Rúa 2015.
- 284 Díaz-Andreu García 1994:138–141; Bueno Ramírez *et al.* 2005a, 2008, 2012; Díaz-del-Río 2001.
- 285 Martínez Navarrete 1984.
- 286 Díaz-del-Río 2001; Rovira 2002.
- 287 Díaz-del-Río 2001, 2004a; Blasco *et al.* 2011.
- 288 Cerrillo Cuenca *et al.* 2004.
- 289 Bueno Ramírez *et al.* 2005a.
- 290 Márquez-Romero and Jiménez-Jáimez 2010, 2013; Márquez-Romero *et al.* 2011; Wheatley *et al.* 2012; Becker 2013; Valera *et al.* 2013; Delibes de Castro *et al.* 2014; Jiménez-Jáimez 2015.
- 291 Jorge 2003; Jiménez-Jáimez and Márquez Romero 2006.
- 292 Peña Romo 2011; Boaventura *et al.* 2014.

THE EMERGENCE OF RANKED SOCIETIES:
THE LATE COPPER AGE TO EARLY BRONZE
AGE (2,500–1,500 BCE)

INTRODUCTION

During the late third and early second millennia cal BCE, Iberian communities engaged in profound transformations of their social world. In the late third millennium BCE, a few special individuals produced and incorporated Bell Beaker ceramics and associated luxury objects, such as gold, copper weaponry, and ivory buttons, into their lives. Archaeologists have sought to discern the factors that enabled these elites to gain their status and prestige. Animal domesticates were increasingly used for their secondary products, such as dairy products, wool, and as beasts of burden or transportation.¹ Between 2,200 and 1,500 cal BCE, during what is generally known as the Early Bronze Age, marked reorganization occurred. Many settlements were abandoned and new ones established. Mortuary practices shifted from collective to individualizing ones, although some megaliths and communal tombs continued to be used, perhaps in acts of resistance against the new “world order.” In southeast Iberia, imposing settlements evocative of east Mediterranean palaces were established, and some archaeologists have proposed the emergence of state-level organization. There was, however, enormous variability in the peninsula, but also comparable developments, such as between the southeast and southern Meseta. Indeed, while geographically coherent, the peninsula was a mosaic of regional social groups who interacted but retained a distinctiveness in terms of their material culture and histories.

This dynamism of the Iberian social world occurred against a backdrop of climatic and environmental instabilities. Around 2,200 cal BCE, an abrupt oscillation known as Bond event 3 (or the 4.2 kya event) took place. In mainland Europe, this event is associated with colder and drier weather, and, in the northern Mediterranean, with wetter conditions.² In the Iberian Peninsula, multiproxy analyses point to significant degradation and aridification during Bond event 3, particularly in the Meseta, southwest, and southeast.³ However, settlement diminution and an apparent demographic shift from the

southwest to the east occurred prior to 2,200 cal BCE. Thus, the precise relationship between cultural practices and possible climatic triggers remains to be fully elucidated.

Given continuities from the early third millennium cal BCE, the same regions are considered in this chapter: the north/northwest, southwest, southeast, east and northeast, and interior. The Balearic Islands are also discussed as they are settled for the first time and show linkages to east/northeast Iberia (Figure 6.1). Given the centrality of the Iberian Beaker phenomenon in European prehistory, an overview on the topic introduces this chapter.

THE BEAKER PHENOMENON AND A BRIEF HISTORY OF BEAKER RESEARCH ON THE PENINSULA

The so-called Beaker phenomenon has dominated the archaeology of the late third millennium BCE. One reason is because some of the oldest Beakers in Europe come from Iberian contexts, which date to ca. 2,700 cal BCE.⁴ Another reason is because there are more Beakers found in Iberia and in western Iberia, in particular, than any other region of Europe.⁵ Beaker ceramics constitute, however, a very small proportion of the ceramics utilized.⁶ Their distribution is also regionally patchy.

The Beaker phenomenon refers to a set of distinct though related material and social practices with possible demographic implications. One is the appearance of Beaker ceramics, a relatively coherent but regionally variable set of pottery found in burials and settlements throughout most of Western and Central Europe and North Africa at this time.⁷ In Iberia, Beakers are characterized by impressed or incised geometric designs placed in horizontal zones around a thin-walled (<5 mm) vessel.⁸ Some rare Beakers are decorated with ocular (or solar), ramiform, and cervid imagery.⁹ There are also Beakers that have the form of the decorated vessels but are themselves undecorated.¹⁰

Beaker vessels were usually fired in an oxidizing environment, which gives them their orange color. However, Ciempozuelos-style Beakers found in central Iberia are dark (gray or black) and in-filled with white ground, creating a dramatic color contrast. Their dark hue is the result of a second firing in a reducing environment, which followed an initial firing in an oxidizing environment. Beaker wares come in three general forms, sometimes referred to as the Beaker set (Plate 8).¹¹ One is the S-shaped vessel that looks like an inverted bell, with a width:height ratio of 1:1 and a capacity to hold ca. 1 liter of liquid. The second is the wide bowl, with its width:height ratio of 3:1, which was probably used for holding solids. Other forms include small bowls and pots, most likely meant for individual use (perhaps to distribute the liquids and solids from the other two vessels). There are also some that are exceptional in their size and/or ornateness, which suggest displays of virtuosity on the part of

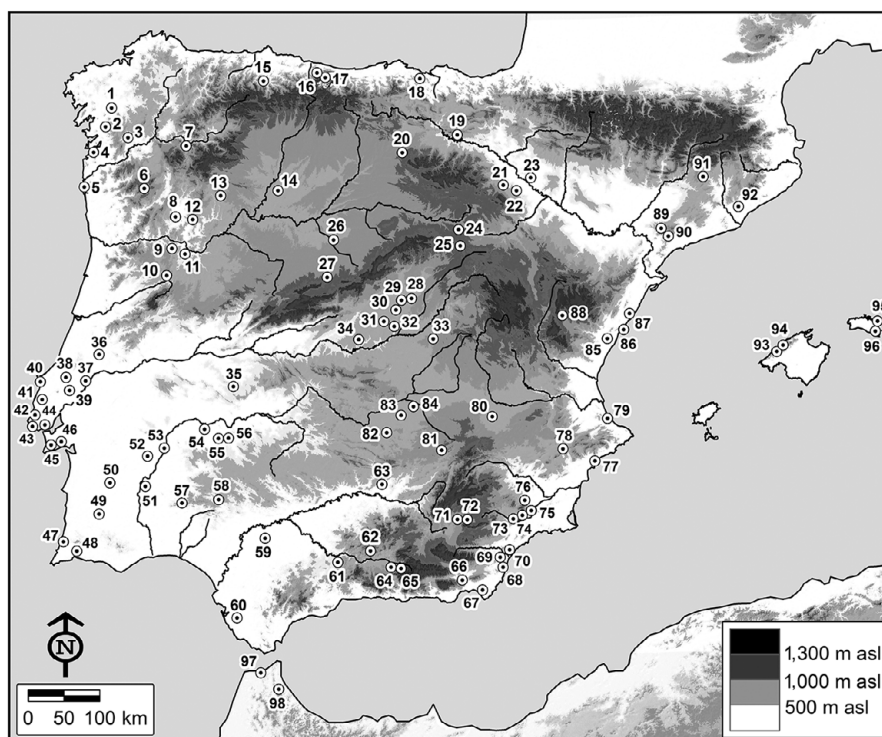


Figure 6.1 Late Copper Age/Early Bronze Age sites discussed in the text (key sites). 1. Devesa do Rei; 2. Campo Lameiro; 3. Cameixa; 4. Monte das Cabanas; 5. Carreço Praia; 6. Cruz de Cepos; 7. Cova do Santo; 8. Buraco da Pala; 9. Castanheiro de Vento and Castelo Velho; 10. Fraga da Pena; 11. Fumo; 12. Fraga dos Corvos; 13. El Pedroso; 14. Santioste and Molino Sanchón II; 15. El Aramo; 16. El Milagro; 17. Cueva de Arangas; 18. Ilso Betaio; 19. Alto de la Huesera; 20. Cueva Mayor; 21. Majaladares; 22. Moncín; 23. Monte Aguilar; 24. El Parpantique; 25. La Sima; 26. Fuente Olmedo; 27. El Castillo de Cardenosa; 28. La Magdalena; 29. Camino de las Yeseras; 30. Los Berrocales; 31. Humanejos; 32. Ciempozuelos; 33. El Alto del Romo; 34. Valle de las Higueras; 35. Atalaya; 36. Agroal; 37. Galeria da Cisterna; 38. Castro de São Martinho; 39. Vila Nova de São Pedro; 40. Pai Mogo; 41. Zambujal, Cova da Moura, and Bolores; 42. Praia das Maças; 43. Alapraia; 44. Leceia; 45. Outeiro Redondo; 46. Palmela and Rotura; 47. Vale da Telha; 48. Alcalar; 49. Atalaia; 50. Porto Torrão; 51. Torre Velha 3; 52. Perdigões; 53. San Blas; 54. La Pijotilla; 55. Las Minitas; 56. La Solana del Castillo de Alange; 57. La Traviesa; 58. El Trastejón and La Papúa; 59. El Acebuchal; 60. Monte Berrueco; 61. Alcaide; 62. Los Castillejos de las Peñas de los Gitanos; 63. Peñalosa; 64. Cerro de San Cristóbal; 65. Cerro de la Encina; 66. Los Millares; 67. El Barranquete; 68. Gatas; 69. El Argar; 70. Fuente Álamo and Almizaraque; 71. Castellón Alto; 72. Cerro de la Virgen; 73. Lorca; 74. La Bastida; 75. Tira del Lienzo; 76. La Almoloya; 77. Illeta dels Banyets; 78. Terlinques; 79. La Vital; 80. El Acequión; 81. Castillejo del Bonete; 82. Cerro de la Encantada; 83. El Azuer; 84. Los Romero; 85. Villa Filomena; 86. Orpesa la Vella; 87. Santa Llúcia; 88. Las Costeras; 89. La Coveta de l'Heura and La Solana de Bepo; 90. La Turquesa; 91. Forat de la Tuta; 92. Can Roqueta II; 93. Son Ferrandell-Olesa and Son Matge; 94. Son Muleta; 95. Sa Mitja Lluna; 96. Biniai Nou; 97. Gar-Kahal; 98. Kaf Taht el-Ghar.

Map: Antonio Blanco-González

the artist as well as markers of the prestige of the user. These vessels were found at Acebuchal, Palmela, El Ventorro, El Alto del Romo, and Humanejos.

A second way that Beakers are approached is as part of a panoply of objects known as the Beaker package.¹² These can include one or more of the following:

- (1) Copper dagger, awl (most often in female burials),¹³ axe, and/or tanged point (Palmela point)
- (2) Archers' wristguard made of stone
- (3) Tanged flint arrowhead
- (4) Gold objects, such as beads, sheets, a diadem (as at Fuente Olmedo¹⁴ and Camino de las Yeseras¹⁵), and (rarely) a wristguard
- (5) V-perforated buttons and beads in diverse forms and materials, including bone, tooth, and ivory¹⁶
- (6) Cinnabar

As with their designs and forms, there is a great deal of variability by region and site in the goods and contexts associated with Beaker ceramics. Rarely, for example, is the full panoply of goods found together in Iberian sites. This is in contrast with sites in the UK, such as the Beaker burials at Boscombe Down, Wiltshire, near Stonehenge.¹⁷ There, the grave of the so-called Amesbury Archer was accompanied by Beaker vessels, flint arrowheads, stone wristguards, copper knives, boars' tusks, and gold ornaments. Indeed, in Iberia, the "package" can be found without Beaker ceramics¹⁸ or even without associated bodies in what otherwise appears to have been a burial context. This was the case at El Morcuero and El Alto III, and this was not because of acidic soils.¹⁹ While in much of Europe, the Beaker package is typically associated with individual burials, in Iberia the picture is variegated. In the Meseta, Beakers tend to be found in individual/double graves and small tombs for around five individuals (mostly fewer than ten).²⁰ In other regions, they tend to be found in collective tombs, settlements, as well as ceremonial sites.

Finally, Beakers are understood as a chronological phase and set of material practices that spanned the mid-third millennium cal BCE and continued until as late as 1,740 cal BCE, at least in the Meseta (at Camino de las Yeseras).²¹ This third approach considers Beaker ceramics, their associated material "package," and the individuals found with them and their role in contemporary society, economics, and politics.

The identification and first studies of Iberian Beaker ceramics began during the late nineteenth and early twentieth centuries. Following investigations in the 1860s by Carlos Ribeiro at the settlement of Rotura in Portugal, A. I. Marques da Costa (1857–1933) collected some Beaker fragments, although he did not write much about them.²² In 1876, Mendes and Silva, under the guidance of Ribeiro, conducted investigations at the artificial caves of Casal do Pardo.²³ Another campaign was undertaken in 1906–1907 by Marques da

Costa. Within these caves, carved into soft biocalcarene, Beaker ceramics (including Maritime and the eponymous Palmela wares) and copper tanged points were discovered. The Beaker assemblage was only fully published by Leisner *et al.* in 1961.²⁴ In Spain, the first Beakers were discovered in 1894 at Cuesta de la Reina, in Ciempozuelos.²⁵ The precise location of the Ciempozuelos site is not known, as it was likely destroyed in the construction of the M-404 highway. It is presumed that the ceramics came from a hypogeum cemetery made up of at least seven tombs; their find contexts were described as a “pequeña oquedad o cueva.”²⁶ The associated settlement for the cemetery was likely Camino de Tiverilla. Early prehistorians also studied the human remains found at Ciempozuelos, particularly the crania, in order to determine whether the people associated with them were local or foreign.²⁷

Following these first discoveries and a recognition that similar ceramics and associated objects were being found over much of Western Europe, scholars of the twentieth century sought to find the Beaker “homeland” and developed models to explain the spread of Beaker culture. Hubert Schmidt (1864–1933) was the first to propose an Iberian origin for the Beaker “people.”²⁸ The model was adopted by Bosch-Gimpera, who studied with Schmidt at the University of Berlin between 1911 and 1913.²⁹ Bosch-Gimpera also proposed a relative chronology for Beaker styles.³⁰ He believed, using stratigraphic sequences of sites with Beakers, that the earliest were derived from the incised ceramics of the Neolithic *Cultura de las Cuevas* of southern Iberia; these were the First Style Beakers found at Palmela and Ciempozuelos. Second Style Beakers (such as those at Los Millares) had “less pure rendering.” These “degenerated” into Third Style Beakers, which included vessels with cord impressions. Even if this sequence is not accepted today, it is striking that the dating that Bosch-Gimpera proposed for the Beakers – before 2,000 BCE – was generally correct. Alberto del Castillo proposed a “Great Hispanic Culture” that originated in central Iberia (i.e., Spain) and spread throughout Western and Central Europe.³¹ Castillo’s model was the first comprehensive one for Iberian Beakers, as it incorporated the archaeological evidence known at the time, which he documented through the study of museum collections and analyzed by regional groups known by names still used today, such as Carmona, Ciempozuelos, and Palmela. As did Bosch-Gimpera, Castillo saw the Guadalquivir Valley as the place of origin for the Beaker culture, which derived out of the incised pottery tradition of the Neolithic *Cultura de las Cuevas*. The cause and mechanism for the spread of the Beaker culture was related to the search for copper, he argued. He did not believe that the anthropological remains associated with the Beaker finds suggested an ethnic unity or Beaker folk.

Childe did not agree. To him, the Beaker culture of Iberia represented a people of “a distinctly brachycephalic type,” who were mobile male warriors, metallurgists, and/or traders. He was also not entirely convinced of Castillo’s

notion of their Iberian origins, remarking “I find this view quite incredible but having nothing better to offer I shall accept it.” He imagined these Beaker people would have “roamed abroad on their own, but always taking with them their wives to make their pots and brew their beer.”³²

Edward Sangmeister played a formative role in Iberian Beaker studies. Based on research he conducted for his doctoral dissertation, Sangmeister proposed a new relative dating system for the different Beaker styles and what came to be known as the dual-origin/reflux model (*Ruckström*).³³ For Sangmeister, the Tagus Valley was the place of origin for the Maritime style, which expanded along the Atlantic coast and then to the European interior. In Central Europe, this first wave of Maritime Beaker users “hybridized” with locals and adopted other accoutrements, such as the archers’ wristguards and V-perforated buttons, and then spread out again over Western and Southern Europe. In this “reflux” movement, corded Beakers (= all-over corded [AOC]) came to Iberia.

Dutch archaeologists Jan Lanting and J. D. van der Waals saw things differently. To them, the Beakers originated not in Iberia but in the Netherlands and northwest Germany and were associated with the Single Grave-Corded ware culture.³⁴ Although in his 1977 dissertation on Bell Beakers of the Iberian Peninsula, Harrison had supported an Iberian origin, in 1980 he changed his perspective and agreed that the early corded Beakers in Iberia predated Maritime Beakers and came from over the eastern Pyrenees into northeast Spain, where they are primarily found.³⁵

Beginning in the 1970s, dating programs began to contribute insights into the Beaker phenomenon in Iberia, with the first Beakers dated from the fortified settlement of Zambujal.³⁶ Maritime Beakers were determined to be the earliest, and then ca. 2,300–2,200 cal BCE, regional varieties (Palmela, Ciempozuelos, etc.) emerged.³⁷ The 1970s also saw the rise of processual approaches to European and Iberian archaeology, and many archaeologists shifted away from seeking the origins of Beakers toward understanding their functions, social contexts, and mechanisms for their spread. For scholars like D. L. Clarke (1937–1976), the problem was not that more data were needed, but new perspectives, specifically in “understanding the functional and idiosyncratic attributes of the beakers and their assemblages, *before* any classification.”³⁸ Clarke and others viewed Beakers less as a manifestation of a distinctive ethnic group, but rather as prestige goods and markers of a warrior and individualistic ethos of elites who participated in social exchange.³⁹ These elites displayed and used these finely crafted vessels to express their power, particularly through feasting.⁴⁰ Many models used to explain the function and meaning of Beakers were developed by British prehistorians, and were often used to explain Beakers throughout Europe, including Iberia.

Beginning in the 1990s, monolithic understandings of Beakers – and of material culture in general – gave way to analyses of the variability of Iberian Beakers in their forms, functions, chronologies, and contexts using statistical

and archaeometric techniques, such as paste analysis and residue studies.⁴¹ Kunst seriated the ceramics at Zambujal and showed that *copos* and Maritime Beakers overlapped at the site, unlike at other sites, like Rotura.⁴² Based on this, he argued that the typological archetype of the Maritime Beaker was the *copo*. This thesis was developed by Amaro based on analyses of other Beaker contexts in the Estremadura.⁴³ Petrological studies also demonstrated that most Iberian Beakers seem to be made from local materials and were not part of wide-ranging exchange networks.⁴⁴ Residue analyses showed that, while Beaker ceramics indeed seem to be associated with high status graves, as they co-occur with other high-status goods, they were used for a range of activities. These included the consumption of beer, mead, fruit wines, and animal fats, copper smelting, and as receptacles for cremated remains.⁴⁵ Guerra-Doce argued that all of these activities share an important symbolism related to the transformation of substances. Residue studies have also shown that Beaker vessels were sometimes used in the same ways as other undecorated vessels, such as for the consumption of alcoholic beverages. Analyses of plain and Beaker pottery from Valle de las Higueras demonstrated that the Beaker vessel was used for drinking beer, while the other plain vessels were used to consume fish stew, wheat, mead, and a food with animal fat.⁴⁶ At Camino de las Yeseras, trace element studies revealed intriguing differences in the variability of diet between females and males. Among the females, there were no significant differences (between each other and when compared to those without Beaker ceramics). Among the males, there were significant differences that reflected variability in meat consumption; this was particularly the case for the male with the gold diadem.⁴⁷ With DNA studies, more nuanced and complex narratives are emerging, which remain to be fully interpreted. One investigation showed that, in Iberia, the Beaker phenomenon did not appear to be linked to the movement of a biologically distinctive group of people. This is in contrast to the UK, where the arrival of the Beaker complex was coincident with a significant genetic shift and, thus, does appear to be related to a migration.⁴⁸ In a subsequent paper, however, which analyzed a larger sample and focused exclusively on Iberia, a significant genetic contribution of people of steppic ancestry was discerned in samples dated to 2,000 cal BCE.⁴⁹ These results have revived old debates over whether a demographic shift (a Beaker Folk) was instrumental in the adoption of Beaker ware and associated material goods in Europe. While it is difficult for most archaeologists to assess the genetic evidence, biological anthropologists have long argued that there is no necessary correlation between genetic ancestry and cultural (or linguistic) behaviors. There is no reason, for example, to assume, that people with steppic ancestry who may have ended up in Iberia after many generations maintained a distinctive identity or cultural practices, or expressed a visibly distinctive phenotype.

Another development in the study of the Beaker phenomenon is a recognition that the classic Beaker typology developed from the type sites (Palmela,

Ciempozuelos, etc.) is problematic. It was created at a time when Beakers in northern and northwest Iberia (such as in Galicia) were not yet known, and, therefore, it does not capture their full diversity. The enormous variability within so-called styles or groups also presents limitations to their utility. Given that these typologies are still used, however, a brief summary of their characteristics are provided.⁵⁰

- Maritime, also known as International Style (Figure 6.2a): These Beakers are decorated with cord-impressed bands filled with impressed cross-hatching or repeated horizontal hatching separated by nondecorated polished bands. In Portugal (and Galicia), the bands are sometimes filled with dots and/or linear dots. In the case of repeated horizontal hatching, the angle of the hatching alternates with each band. Sometimes bands of triangles and zigzags are included. Vessel forms include open hemispherical bowls or shouldered (S-shaped) vessels with flat base. Maritime-style Beakers are found in settlements and burials throughout the peninsula, on the Balearics,⁵¹ and in North Africa (e.g., at Kaf Taht el-Ghar⁵² and Gar-Kahal).⁵³ Guerra-Doce suggested that Maritime Beakers are skeuomorphs of salt-trading pouches, noting that Beaker ceramics are closely correlated with the location of salt resources or salt-processing sites.⁵⁴
- Palmela (Figure 6.2b): Vessels of the Palmela style are decorated with combed and dotted geometric designs, including zigzags, vertical bands (metopes), triangles, and checkerboards, often in combination in different horizontal bands. Like Maritime/International Beakers, Palmela vessels can be shouldered (S-shaped) vessels and bowls. They are found in the Estremadura and lower Tagus Valley.
- Ciempozuelos (Figure 6.2c): Vessels of this style are distinctive for their black or gray color, and impressed decoration filled with white paste made with calcium carbonate.⁵⁵ The decorative patterning in the horizontal bands tends to be small and includes zigzags and checkerboards. The most common forms are the small bowl or large shouldered vessel. The interior rim and the base are sometimes decorated; on the base, this decoration takes the form of radial or cruciform bands, or a sun/star. Bowls and cups sometimes have an umbo or omphalos on their base. Ciempozuelos vessels are widely distributed in central and eastern Iberia.
- Carmona (Figure 6.2d): Carmona-style vessels are associated with baroque designs of triangles and zigzags, made by dotting. Vessel forms are variable and include plates, bowls, shallow dishes, and goblets. They are concentrated in the Guadalquivir Valley.
- Salamó (Figure 6.2e): Bowls are the most common vessel form, and vessels tend to be brown or black in color. They are concentrated in northeast Spain.

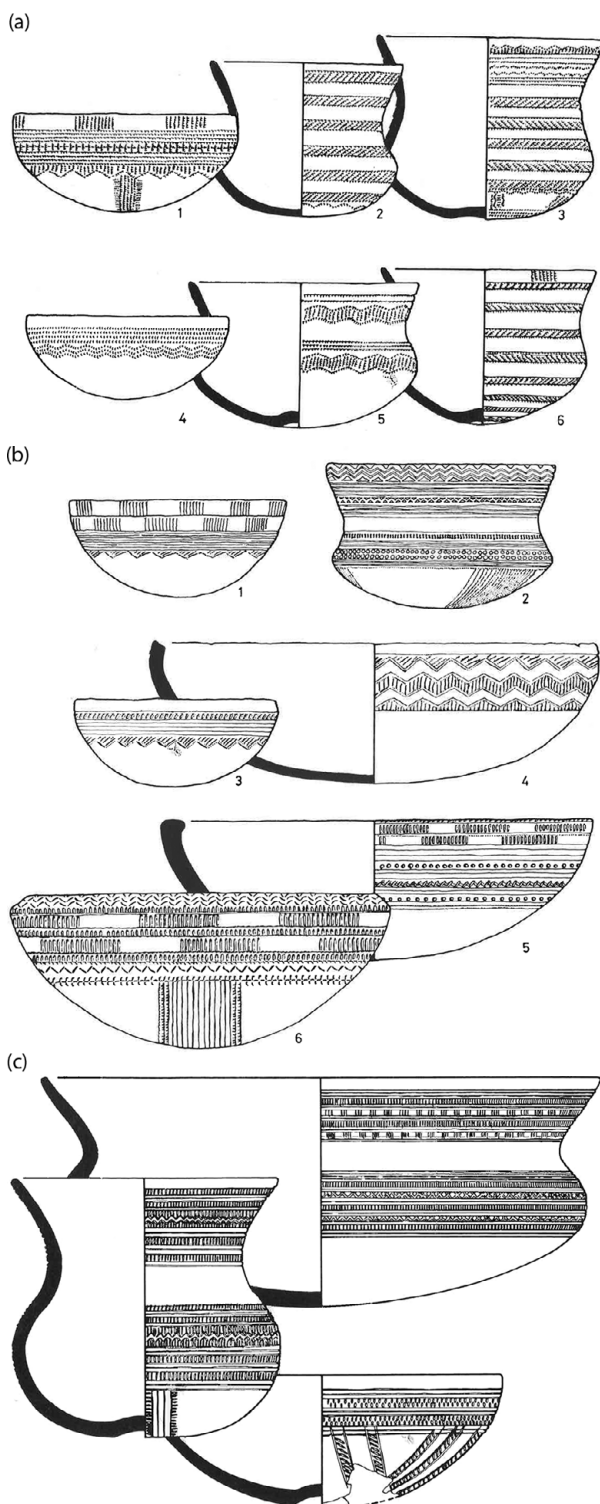


Figure 6.2 Regional Beaker wares and their distribution – (a) Maritime. (b) Palmela. (c) Ciempozuelos. (d) Carmona. (e) Salamó.
Courtesy: Richard J. Harrison.

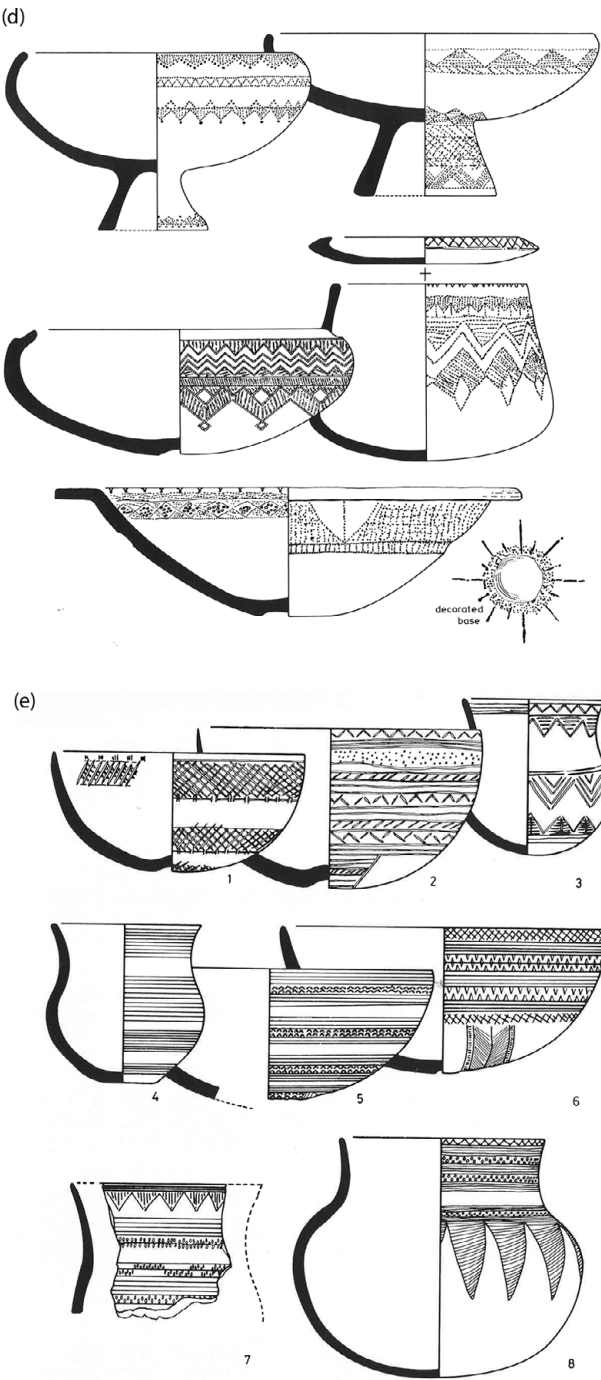


Figure 6.2 (cont.)

HISTORIES

The North and Northwest

Research histories and the archaeological record are uneven in this region. The longstanding research programs in the upper Douro have generated a far richer picture than for the lower Douro and coastal regions.⁵⁶ Landscape studies in the Sierra de O Bocelo, Morrazo Peninsula, and Ulla-Deza region in Galicia have also contributed textured insights into the cultural transformations of agropastoral communities.⁵⁷ In general, burials tend to be better known than settlements, although recent studies have begun to change this picture. The acidity of the soils throughout much of the region have hampered studies of human health and diet and animal hunting and herding. Highly localized ceramic sequences have been created throughout this region, which complicate interregional comparisons and require absolute dating to tether chronologically. The available evidence, however, suggests that there were no marked cultural or socioeconomic changes between the late third and early second millennia BCE in the north and northwest, at least when compared to the southwest or southeast (see later), despite innovations in ceramic technologies and shifts in settlement pattern. Indeed, one might question the appropriateness of cultural historical terms such as Chalcolithic and Early Bronze Age in the region. However, rather than viewing these continuities as signs of “backwardness” and “conservatism,” they can be understood as expressions of resilience and stability.⁵⁸

Bell Beaker pottery is one marker of the late third/early second millennium cal BCE in the region. Here, Beakers are found in domestic, funerary, and ceremonial settings.⁵⁹ However, their distribution is patchy; they are most common in the northwest and rare to the east (in Asturias, Cantabria, and the Basque country). In Asturias, Beaker pottery was recently discovered at the copper mining and metallurgical site of El Aramo dated to 2,700–2,460 BC.⁶⁰ In Cantabria they are only known from funerary contexts,⁶¹ while in the Basque region they have been found in both settlements and burials.⁶²

In northern and northwest Iberia, the manufacture and use of Beakers span a long period of time, between ca. 2,700 and 1,900 cal BCE.⁶³ Thus, their uses and meanings must have been highly variable. At Buraco da Pala, in northern Portugal, Beakers were found in contexts that were contemporary with the earliest Beakers in the Estremadura, dated between ca. 2,800 and 2,600 cal BCE.⁶⁴ The ceramics from the site include “imitation Bell Beakers,” which are decorated in highly individualized styles.⁶⁵ Another ceremonial site where Beakers were found was the open-air site of Devesa do Rei.⁶⁶ Devesa do Rei has been considered a ritual/cult site owing to its long span of sporadic use (dating from the late fifth to early first millennia cal BCE) and lack of vertical stratigraphy. There, the majority of the Beaker ceramics were found in levels dated to the early second millennium cal BCE (*Bronze Inicial*).

Not all dated sites have Beakers, as noted. One of these is the open-air mountain settlement of Ilso Betaio. There, semisubterranean huts were identified, of which three were excavated and found with hearths and lithics dated stylistically to the late third millennium BCE.⁶⁷ Another context without Beakers is a pit cremation at Cameixa.⁶⁸ The remains of the deceased were placed in a ceramic vessel of a form and design (with *cordones* and *mamilones*) similar to ceramics found along the Atlantic, particularly Brittany and the British Isles (where it is known as the Hilversum Horizon), although the Cameixa vessel was made from local raw materials.

Beaker designs are varied throughout this vast region, no doubt due to different interaction spheres.⁶⁹ For example, in northwest Portugal, Beakers are decorated in the Maritime, geometric *puntillado*, and Palmela styles, while in northeast Portugal (principally in the upper Douro), Beakers of the Maritime, geometric *puntillado*, and Ciempozuelos types are found. These patterns suggest that communities closer to the coast were connected to groups in the Estremadura, while those in the interior interacted with groups in the Meseta. In Galicia, there are also distinctive decorative styles for Beakers produced by impressions using a range of different shells and grooves.⁷⁰ In the Basque region, Beakers of the Ciempozuelos type are most common, with the Maritime style also found. Unlike other regions of the peninsula, it is unclear whether the Maritime style predates the regional incised wares in the Basque region. In the north, it is rare to find Beaker ceramics associated with V-perforated buttons and tanged copper points.⁷¹ It is notable that, in the Basque region, the first metal objects occur with Beakers, unlike other regions of the peninsula.⁷²

Bettencourt's analysis of the different contexts of Beaker ceramics suggests that a one-size-fits-all interpretation of Beakers is untenable, specifically one that relates Beakers exclusively to the emergence of individualized status.⁷³ In northwest Portugal, Beakers are found in burial contexts (megaliths that had been in use through the fourth and third millennia BCE) and in monumental spaces (both "natural" or built), such as Monte da Penha. They are rare in settlements. However, in the interior/northeast Portugal, Beakers are rarely found in burials. Instead, they tend to be found in monumentalized sites that appear to have had collective importance, such as Crasto de Palheiros, Castelo Velho de Freixo de Numão, Castanheiro de Vento, Buraco da Pala, and Fraga da Pena.⁷⁴ Given their presence in megaliths, it seems possible that those who buried their dead with Beakers wished to display a continuity with the ancestral past – perhaps using Beakers as a "form of legitimation of a new emergent order or as new symbols of identity and of social authority."⁷⁵ This practice has also been attested at megaliths in Galicia and the Basque country. At A Mina de Parxubeira⁷⁶ and Larrarte,⁷⁷ both thought to have been built in the fourth millennium cal BCE, later burials with Beaker ceramics were found.

Analyses of Iberian Beaker ceramics from northwest Iberia (Galicia) show primarily local production, involving distances between sources and

consumption sites of less than 15 km, but also some nonlocal production.⁷⁸ This pattern of local production is typical of Beakers in Europe. Vessel morphology and decoration methods (such as shell impression using *Cerastoderma edule*), however, also suggest connections with more distant groups across the Atlantic façade.⁷⁹



Between 2,300 and 1,600 cal BCE, new settlements were established, some as pit complexes or in different landscape contexts, while others continued to be occupied from earlier in the third millennium cal BCE. In Galicia, groups founded more dispersed settlements in the uplands, most likely as a result of soil degradation.⁸⁰ A diachronic study of paleoenvironmental proxies in the rock art landscape of Campo Lameiro, in northwest Spain, provided evidence for the role of anthropogenic fire in transforming the landscape during this time.⁸¹ In the eastern Cantabrian region, few settlements are known.

Some of the newly established low-lying pit complexes include A Pataqueira, Monte das Cabanas, and Lamas de Abade.⁸² In northern Portugal, lowland sites predominated in the west,⁸³ while hilltops were occupied to the east.⁸⁴ One of these lowland sites is Carreço Praia, where salt was produced. Tin-bronze metallurgy took place at Sola ca. 1,600 cal BCE.⁸⁵ The eastern hilltop settlements include Barrocal Alto⁸⁶ and Fraga dos Corvos, located on a granitic spur.⁸⁷ Some sites do not appear to have been places of residence, such as the walled enclosure of Fraga da Pena, where rock art was found.⁸⁸ A hoard of halberds was found at Cemitério de Mouros.⁸⁹ At Fumo, located on a steep platform overlooking the Ribeirinha River, a tributary of the Côa,⁹⁰ excavations between 1996 and 1999 recovered fireplaces, pits, postholes, and a dump, but no stone walls. Animal bones provided two radiocarbon dates between 2,100 and 1,700 cal BCE. Ceramics typical of the Early Bronze Age of the region were also found, including flat-bottomed vessels adorned with cords and knobs, and some Cogeces pottery. Bones of animal domesticates (ovicaprids and cattle) and wild animals (rabbit, deer, boar) attest to mixed herding and hunting practices.

As with Bell Beakers, regional variation characterizes the material culture of the early second millennium cal BCE. The mountainous geography of the region likely played a role in the formation of distinctive identities as expressed through material culture. In Galicia and north-central Portugal, both coarse and fine wares were produced. The coarse wares tend to be associated with large vessels. The fine wares included vessels with wide horizontal rims,⁹¹ plain open carinated vessels with flat bottoms, and inverted tronco-conical vessels, often with handles and appliquéd ropes.⁹² The production of flaked stone tools dropped off, while metal use increased, with arsenical copper primarily used to make objects. Tin-bronze alloys appear for the first time in areas where local tin ores (cassiterite) are also found.⁹³ Indeed, one of the largest

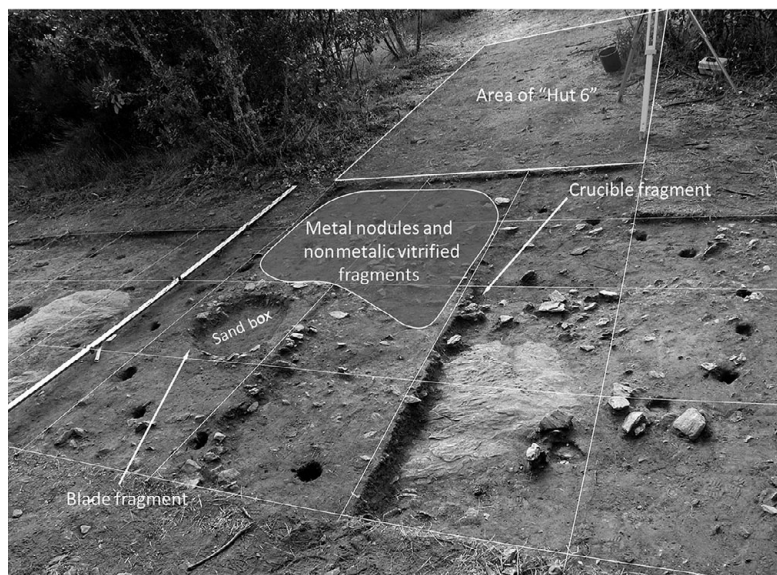


Figure 6.3 Fraga dos Corvos, Middle Bronze Age, bronze melting working area of Sector A.

Courtesy: J. C. Senna-Martínez

concentrations of tin ores in all of Europe is in northwest Iberia. The occurrence of objects made from these tin-bronzes in coastal settings suggests widespread exchanges facilitated by seafaring.⁹⁴ The north/northwest is also among the regions where the first silver adornments (spirals, rings) appear, where they are found in funerary contexts dated to the first half of the second millennium cal BCE.⁹⁵ These silver items, however, were produced with distant ores; lead isotope analyses point to southwest Iberian sources.

Excavations at Fraga dos Corvos have helped elucidate the relationship between metallurgy and social life during the early second millennium BCE.⁹⁶ Situated on a hilltop overlooking the Macedo de Cavaleiros basin, the settlement is made up of a series of small subcircular huts (3 m in diameter), ringed by postholes. One of these huts (hut 4) is larger (and had a porch) and was associated with the remains of metallurgical processing, including crucibles, molds, and metal drops (Figure 6.3). The small scale of the production, situated within a domestic context and not destined for the production of agricultural tools or weapons, suggests that these goods may have been a vehicle for the local expressions of status in an environment where it was otherwise difficult to generate surpluses.

The dead underwent a range of mortuary rituals and were housed in caves and rock-shelters, cists, pits, and older Neolithic megaliths. Mortuary spaces were generally placed away from settlements, with corpses inhumed and rarely cremated. It is unclear what structured these different burial practices. One example of a Neolithic megalith that continued to be used is the Madorras 1

tumulus.⁹⁷ Burial caves include Pico Ramos.⁹⁸ Cists and cairns covering burial pits or chambers were sometimes constructed near megalithic monuments. Valuables, such copper, silver, and gold objects, were occasionally placed with the dead.⁹⁹ At Monte das Cabanas, the dead were housed in what were formerly underground storage silos.¹⁰⁰ At the karstic cave of Cova do Santo, fourteen individuals were found, who died ca. 1,890–1,600 cal BCE.¹⁰¹ Paleodietary and paleopathological studies revealed that they were young (under forty years of age); many suffered from degenerative joint disease, and they consumed a homogeneous diet of C3 plants and terrestrial animals.

Assessing the nature of social organization and social inequality in the region is difficult given the poor preservation of human remains. Archaeologists have had to turn to analyses of prestige goods, such as metals, and the labor involved in manufacturing objects and monuments. Some have suggested that elites emerged during the mid-third millennium BCE, and that their power was based on the control and circulation of valuables, such as metal ores. Between 2,500 and 1,500 cal BCE, copper oxide and carbonate ores – azurite and malachite – were mined from the deep shafts at El Milagro and El Aramo. The labor implied by these deep shafts suggests that exploitation of such minerals, most likely for exchange, may have involved groups larger than the domestic unit.¹⁰² Others argue that mining was likely small-scale and seasonal. Supporting this model is Cueva de Arangas, located just 20 km from the Milagro mine, which was a seasonal camp used for mineral processing in the Early Bronze Age.¹⁰³

Stelae and statue-menhirs with shared iconographies found throughout northern and northwest Iberia are material expressions of these exchange networks, which extended to groups in the Atlantic and Mediterranean worlds (Figure 6.4).¹⁰⁴ The stelae are rectangular in form and have imagery on one side. Clearly related to the stelae but different in their imagery are the statue-menhirs, which are life-sized and decorated on all sides, as if to emphasize their three-dimensionality. They are often shown with clothing or adornment and sometimes with weapons, such as daggers, halberds, and swords. Despite their human-like qualities, however, their gender is typically unclear; very few have breasts, for example. Thus, their interpretation as representing a new ethos of male militarism, replacing the Neolithic monumental world,¹⁰⁵ cannot be supported. Complicating a gender determination for the statues is the fact that weapons are rarely found in burial contexts in the region and, thus, gender-object associations are not available. The rarity of datable human remains and weaponry in burials also provides challenges to the dating of the monuments. Indeed, some statue-menhirs were found in association with (earlier) megaliths that were used as burials until the second millennium BCE.¹⁰⁶ This was the case for Nave 2 in Alvite, and Collado de Sejos 2, and Peñatu. Furthermore, some of the menhirs were moved. The excavation and dating of statue-menhirs in situ, such as Cruz de Cepos, will be an important direction for



Figure 6.4 Stelae and statue-menhirs of Early and Middle Bronze Age.

Courtesy: M. Díaz-Guardamino

future research. What seems clear is that these monuments were placed at sites associated with the dead and with deep histories. The stelae and statue-menhirs may have been viewed as ancestors themselves, who played an important role in structuring the lives of the living.

The Southwest

The period between 2,600 and 1,500 BCE was a dynamic period for the agropastoral groups of the Iberian southwest. Like their neighbors to the north,

these communities were involved in a range of cultural innovations, most notably the production and use of Beaker ceramics, the burial of their dead in individualized tombs, and, later, the manufacture of bronzes. Following a demographic peak ca. 3,000–2,500 cal BCE, many groups abandoned their settlements and founded new ones. Statistical analyses of radiocarbon dates indicate a prolonged decline in human activity beginning ca. 2,500 cal BCE during the period of Bell Beakers, which continued until ca. 1,500 cal BCE.¹⁰⁷

It was a time of continuities as well, and many practices endured. Some settlements and burials continued to be frequented, although there was a diminution in the area of some settlements by the early second millennium cal BCE, such as Zambujal.¹⁰⁸ Bell Beaker ceramics are found in tombs with pre-Beaker burials, such as Estremoz 7 and Anta das Casas do Canal in the Alentejo,¹⁰⁹ and Casal do Pardo, Alapraia, São Pedro de Estoril, and Cova da Moura in the Estremadura.¹¹⁰ These continuities in tomb use have also been noted in western Andalusia.¹¹¹ Related to these cultural continuities is the horizon known as the *epicampaniforme*. This is term used for contexts that show hybrid practices, such as individual graves in separate cist burials associated with objects typical of the Beaker period, such as Beaker vessels, copper daggers and wristguards, as well as ceramics found in the Middle Bronze Age, such as carinated vessels. In southern Portugal, this “hybrid” period has been known as the *Horizonte de Ferradeira*¹¹² and identified at Monte da Velha 1¹¹³ and Cerro do Malhão.¹¹⁴ In the Estremadura, it is known as the *Horizonte de Montelavar* and is characterized by cist burials with a copper dagger and Palmela arrowheads. However, only a single cist burial is known in the region, and it is the one near the eponymous village.

Relatively little attention has been devoted to the social and economic landscape of the late third millennium cal BCE in the southwest that does not focus on Beaker ceramics. Analyses, for example, of non-Beaker ceramics are rare.¹¹⁵ However, it is clear that in those levels in which Beaker ceramics are found, such as at the settlements of Outeiro Redondo,¹¹⁶ Leceia, and Zambujal, continuities in the manufacture of textiles, use of groundstone tools, and production of flaked lithics were maintained. In metallurgy, there were some developments, including more hammering, cold working and grinding, the use of higher arsenic copper ores, and the use of sheet gold and foil.¹¹⁷ In his seminal study that tested the Secondary Productions Revolution (2PR) model, Harrison compared the faunal collections of third and second millennia cal BCE settlements in Iberia, with Zambujal the only site from the southwest.¹¹⁸ Harrison’s analysis demonstrated no significant change in the ratios of horse, cattle, ovicaprids, pig, and red deer between the pre-Beaker and Beaker levels of Zambujal (unlike at other sites in the southeast, such as Cerro de la Virgen). However, subsequent diachronic studies at Leceia suggested that the 2PR may have been an important factor in social change. These studies showed that it was only during the late third millennium cal BCE occupation of the site that cheese

strainers were found.¹¹⁹ Analyses of the animal domesticates at Leceia revealed that ovicaprids increased in importance over time (peaking during the Late Copper Age/late third millennium cal BCE), while bovids and, less notably, pigs, declined. Nonetheless, cattle were the most abundant of the fauna throughout the site's occupation. This has been understood to mean that cattle were exploited not only for subsistence, but also traction.

Beaker ceramics and the Beaker phenomenon have dominated discussions about the late third millennium BCE, and the southwest is viewed as a key area for understanding their emergence. This is because some of the oldest Beakers in Europe, dated to 2,700–2,600 cal BCE, come from sites in the region. These include Zambujal,¹²⁰ Leceia (and its Hut FM), and Porto Torrão.¹²¹ There are, as noted earlier, also early dates for Beaker contexts in northern Portugal, such as Buraco da Pala, and, thus, we must be cautious about pointing to one river valley or one site for a place of origin for Beakers.

There is significant variability in the frequency of Beakers throughout southwest Iberia, the types of sites and chronological contexts where they are found, their decorative styles and vessel forms, and their associated material culture. Overall, the large fortified hilltop sites, ditched enclosures,¹²² and rich burials (Alapraia, Casal do Pardo/Palmela, etc.) of the Estremadura that were established during the early third millennium cal BCE are also those sites where Beakers are most abundant and found in the greatest diversity. This would suggest that Beaker ceramics were incorporated into an existing framework of social or political differences and that they represented new ways for elite individuals and groups within that world to display distinctive identities.

In the Estremadura, Beaker ceramics have been found in settlements and burials. Of the settlements, Beakers were found at Zambujal, Penha Verde, Pedra do Ouro, Rotura, Leceia, and Vila Nova de São Pedro.¹²³ At Zambujal, Beakers were found in all five phases of the site's occupation, with the fewest in Phase I (the earliest phase, dated to 2,700–2,600 cal BCE) and the larger number in the final phase (V).¹²⁴ Beakers were concentrated in areas of the site where copper metallurgy was practiced.¹²⁵ At Vila Nova de São Pedro, Maritime beakers were found in the final phase of the site.¹²⁶ Some contemporary settlements, however, had very few or no Beaker ceramics, such as Outeiro Redondo.¹²⁷ In burial contexts, Beakers were recovered in the artificial caves of Alapraia,¹²⁸ Casal do Pardo,¹²⁹ and Praia das Mações,¹³⁰ the tholos of Pai Mogo,¹³¹ and the cave of Cova da Moura.¹³² One of the distinctive qualities of Beaker ceramics found in the Lisbon and Setúbal peninsulas is the use of metopes as a decorative design,¹³³ which evoke the metopes found in Penha ware to the north. Cardoso has also noted that there is some patterning in the styles used by site type.¹³⁴ Specifically, Maritime Beakers are most commonly found in the fortified settlements, the Palmela style is more localized to the Sado area, and the incised group tends to be associated with open sites, such as Monte do Castelo and Freiria.

As with settlements, not all contemporary burials were found with Beakers. At the semiartificial mortuary cave of Bolores, just 2 km from Zambujal and contemporary with it (in use primarily between 2,800 and 2,600 cal BCE), no Beaker ceramics were recovered.¹³⁵ Other burials in the Sizandro Valley area, such as Cova da Moura, did have Beakers.¹³⁶ Although, in some sites in Iberia and throughout Europe, Beakers are found with tanged copper points (Palmela points), gold, stone arrowheads, wristguards, and V-perforated buttons made of bone or ivory, Kunst notes that this panoply is less common in the Estremadura than elsewhere. He suggests that diasporic communities might have developed more conservative practices involving the use of all these goods than those in the Estremadura homeland.¹³⁷ At the burial cave of Galeria da Cisterna, dated to the late third millennium cal BCE, V-perforated buttons made from sperm whale ivory and a gold spiral were found, but no Beaker ceramics.¹³⁸

To the south and east, in the Alentejo and Spanish Extremadura, the picture is different. Beaker ceramics are predominantly found in settlements and ditched enclosures, but rarely in burials.¹³⁹ Indeed, there are only six burials in the Alentejo where Beakers have been recovered, to date, and, given that there are hundreds if not thousands of megalithic tombs in the region, this is a striking fact. These burial sites with Beakers include the antas of Casa do Canal 1, Bencafede, Enxacafres, the tholoi of Cardim 6 and Pedra Branca, and the pit burial of Quinta do Castelo I. Through the region, the incised style is more common than the Maritime and geometric *pontilhado* (pontillated) styles. But, again, there is variability in which styles are represented. At the settlement of Porto das Carretas, only the Maritime style is found, but, in the neighboring and contemporary settlement of Mercador/Monte do Tosco, the Maritime style is absent.¹⁴⁰

At the ditched enclosure settlement of Porto Torrão, over 500 fragments of Beaker ceramics were recovered, the largest number in Portugal.¹⁴¹ Most were decorated with *pontilhado geométrico* (combed geometric); the Maritime and incised wares were less frequent. All were concentrated in a central zone of the site and appear to have been locally produced. Also found in association with them was a V-perforated button, gold sheet, and wristguard. As with other sites with Beaker ceramics, the vast majority of the ceramics at Porto Torrão were not Beakers. They included undecorated carinated bowls, jars with lugs, and plates with thickened rims (*pratos de bordo espessado*).

At the ditched enclosure of Perdigões,¹⁴² a minimum number of forty-four Beaker vessels were found, which display less variability in their design grammar than those of the larger site of Porto Torrão. A large number of the Beakers were recovered in a disturbed plow zone or on the surface; those found in primary contexts were in negative structures. All the sherds, however, clustered in the center of the enclosure where evidence for copper metallurgy was also found (like Zambujal). They date to between 2,580 and 2,000 cal BCE. Interestingly, in those burials where nonlocal individuals were identified,

Beakers were not found. In a few sites in the Alentejo, such as Anta dos Cabacinhitos, Vale Carneiro, Anta de Nossa Senhora da Conceição dos Olivais, and Bela Vista 5, Beaker-shaped vessels without decoration were found.¹⁴³ In the Alentejo, there are also the occasional wristguards, Palmela points, and gold sheets (such as found at Anta Grande do Zambujeiro) that evoke elements of the Beaker “package.”

Beakers are rare in the Algarve. The best studied of those sites with Beaker ceramics is Alcalar.¹⁴⁴ Alcalar is one of the largest settlements known in the Iberian southwest. It is a macro-village of ca. 60 acres and associated with one of the largest necropoli in the region. It has been interpreted as a center of power, integrating communities along the Ria de Alvor. Nonetheless, only a few Beaker fragments are known from the settlement, and three were found in the tomb of Alcalar 7. They are predominantly of the Maritime style and date to 2,800–2,200 cal BCE.

Further to the east, Beaker ceramics have been found along the Guadiana and Guadalquivir Rivers.¹⁴⁵ Analyses of Beaker ceramics from San Blas and La Pijotilla, to the east of the Guadiana, and Perdigões and Porto Torrão, to the west of the Guadiana revealed that 75 percent of their inlays were made from bone.¹⁴⁶ This suggests that a technical identity was shared among communities and demonstrates that rivers, such as the Guadiana, did not necessarily mark economic or social borders.

The distinctive style known as Carmona ware is found in this region, although other styles are also represented. Carmona wares were first recognized following excavations at the settlement of El Acebuchal in the Guadalquivir Valley between 1895 and 1910.¹⁴⁷ There, Beaker ceramics were associated with animal bones (deer, ox, pig, and horse), loom weights, copper axes, awls, and Palmela points, and objects associated with metallurgy (slag, crucibles).¹⁴⁸ One AMS date exists (Beta 394881:4830 ± 30 BP).¹⁴⁹

Archaeometric studies of Beaker ceramics in the southwest point to local (or regional) production, with few exotic “outliers.”¹⁵⁰ That similar forms, such as the inverted bell-shaped vessel and bowl, and similar designs are found throughout the region yet locally manufactured suggests that communities made conscious decisions to adopt the standard appearance of these vessels to mark their shared identity with groups across the region, while, no doubt, appropriating them for diverse local uses and meanings.

As noted earlier, the Estremadura appears to be a critical region for understanding the origins of Bell Beakers. In recent years, the chronology placing the Maritime Beakers as ancestral to the regional (incised) wares has been questioned.¹⁵¹ Cardoso,¹⁵² for example, noted that, at Leceia, different Beaker wares (Maritime, Palmela, and Incised) were found together in Hut FM located outside the stone walls that enclosed the site and dated to a short occupation during the second quarter of third millennium cal BCE. This would make these Beakers some of the oldest on the peninsula. As noted

earlier, it has also been argued that the technology of Beaker ware may have evolved out of the *copos* of the Estremadura.¹⁵³

However, even if a technical lineage or relationship could be traced between *copos* and early Beakers, this would not in itself explain the decisions to create these new decorated wares or the social desirability of these ceramics that enabled their spread. The emergent social inequalities of the region, with its fertile soils, where groups engaged in the production and trade of copper goods and other valued raw materials, seem to be key variables. The need for elites, who clearly existed prior to the late third millennium BCE, to display their difference in innovative ways – perhaps to better evoke objects and imagery with ancestral resonances – that is, the engraved plaques – may help to approach their emergence.¹⁵⁴ In addition to taking the macro-view of ceramic production, and Beakers, in particular, it would also be productive to look at the production of ceramics that were not Beakers, particularly their technical qualities and *chaîne opératoire*.¹⁵⁵ In her analysis of unique one-off ceramics from the settlement of San Blas, Kohring focuses on small-scale improvisational practices in the production of non-Beaker ceramics during the late phase of the site's occupation.¹⁵⁶ The variability revealed from this approach sheds light onto cultural esthetics and the pathways by which changes in technological practice might have occurred.



During the late third and early second millennia cal BCE, the period known as the Early Bronze Age, shifts in material and social practices took place throughout the southwest, from the Estremadura to western Andalucía,¹⁵⁷ which point to an episode of social and political reorganization. A statistical analysis of radiocarbon dates for the region points to population decline and a demographic shift eastward, toward the Spanish Extremadura and western Andalucía.¹⁵⁸ While the underlying causes are unclear, the evidence seems to involve the interplay of environmental, demographic, and social factors.

One of the most striking of these changes was the end of or sharp decline in the construction of monumental settlement architecture, including ditch-digging, negative earthworks, and stone-walled sites.¹⁵⁹ A systematic survey in the plain of Antequera presented a stark picture: 180 Bronze Age sites were found, in contrast to 290 Chalcolithic sites.¹⁶⁰ The overall picture suggests that there was either a significant depopulation of the southwest and/or a marked increase in mobility associated with more ephemeral sites.

Accompanying the abandonments was the establishment of new prominent settlements, particularly in the Extremadura and western Andalucía. The locations of these new settlements suggest that people prioritized protection and visibility, in contrast to their predecessors, who placed their settlements near arable land.¹⁶¹ One of these sites was La Solana del Castillo de Alange.¹⁶² Although no radiocarbon dates were obtained, its oldest level was associated

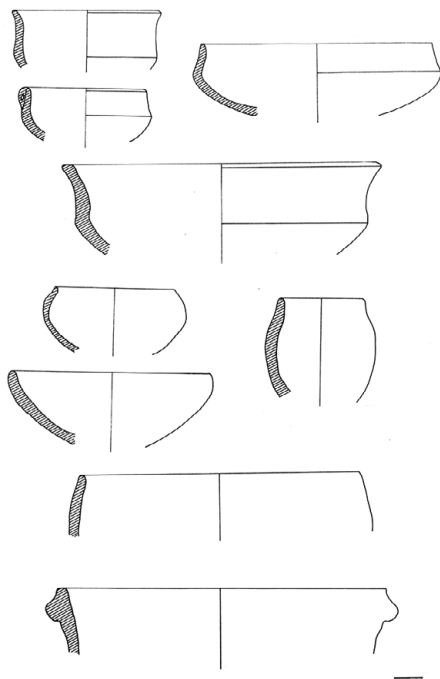


Figure 6.5 Carinated ceramics of the Early Bronze Age, from La Solana del Castillo de Alange.

Courtesy: I. Pavón

with a ceramic assemblage predominantly made up of carinated wares (Figure 6.5). No Beakers nor other markers of the Chalcolithic, such as plates with *bordos almendrados*, were found.

There were also, however, settlements with occupations that spanned the third and second millennia cal BCE. Especially remarkable is the hub of nearly thirty hilltop sites in the western Sierra Morena around the Rio Tinto copper mines, some of which were massively terraced and fortified. El Trastejón was constructed with masonry slopes and terraces and had oval huts with evidence of copper smelting.¹⁶³ The neighboring hilltop site of Atalaya, just 300 m away, features defensive bastions and few artifacts and was likely a watchtower to protect the village. At the huge La Papúa II hill, extending over 20 ha, a masonry sloped wall with bastions surrounding the perimeter was documented prior to its destruction. La Papúa II is located to the south of a cist cemetery, known as La Papúa I. Monte Berrueco, although largely destroyed by the mining of construction materials, produced dates and material remains indicating an occupation between the third and second millennia BCE.¹⁶⁴ These included ceramic plates of Chalcolithic form that were followed by rectangular house plans and typical carinated ceramics of the Early Bronze Age. The fortified settlement of Albalate had occupations that extended between the Copper and Bronze Ages,¹⁶⁵ as did Ronda la Vieja.¹⁶⁶

Settlement continuities have also been noted further to the west, particularly at the hilltop walled sites along the Tagus River Valley. For example, phase V at Zambujal was dated to 1,830–1,740 cal BCE,¹⁶⁷ although it is poorly defined. At Castro de S. Martinho, there are Late Chalcolithic and Early Bronze Age occupations, the latter with walled enclosures.¹⁶⁸ At Agroal, two phases were detected: an early second millennium cal BCE/Early Bronze Age, through radiocarbon dates, and a Late Bronze Age level, determined by flat-based ceramic vessels.¹⁶⁹

Our understanding of settlement pattern during this dynamic period may well change, as development archaeology has begun to increasingly reveal low-lying pit sites in the Alentejo, many with prolonged occupations from the late third to early second millennia cal BCE. One such site is Torre Velha 3, with nearly 600 subterranean features associated with objects used in domestic life (axes, loom weights, etc.) as well as human remains.¹⁷⁰

Because of relatively ephemeral settlements for much of the southwest, mortuary studies have dominated. As in the realm of the living, there were important transformations in the way the dead were treated. In contrast to the collective burials of the fourth and third millennia BCE, which often involved the manipulation and circulation of skeletal elements, groups during the early second millennium BCE generally inhumed their dead individually (and in closed deposits) in necropoli of square stone-lined cists, *covachos*, and cairns in lowland settings disconnected from settlements.¹⁷¹ Sometimes, however, the dead were buried in megaliths and caves where earlier remains were also housed (such as Cueva de Los Covachos).¹⁷² Such reuse may have been acts to recall or appropriate the memory or power of these older graves.

Cist cemeteries are the most common burials. In general, fewer than ten inhumations are found at each cemetery (Figure 6.6). There are also the exceptional cases of Atalaia, with around 150 cists,¹⁷³ and La Traviesa, with around thirty burials housed in smaller cists surrounding a large cist.¹⁷⁴ At Vale da Telha, eighteen graves were found in primarily stone-lined cists, which displayed considerable architectural variation.¹⁷⁵ The tombs contained ceramics typical of the Early and Middle Bronze Ages (carinated, burnished), a stone wristguard, stone beads, two metal objects (a pin and a dagger of arsenical copper), and poorly preserved human remains. The absence of remains in numerous cists (and the small size of some) suggest that the tombs may have been for children or cenotaphs evoking the deceased. Adjacent to the cemetery of Vale da Telha were recovered domestic artifacts (ceramic storage vessels, a cheese strainer) that appear to be partly contemporary with the cemetery.

Inhumations in hypogea were also practiced.¹⁷⁶ One example, dated to 1,750–1,500 cal BCE, is Torre Velha 3; its underground rock-cut pits yielded ceramics, awls, knives and body ornaments in copper and silver, and animal bones, which points to feasting rituals.¹⁷⁷ Arsenical copper and the earliest bronze items in the region have been documented in these burials.¹⁷⁸

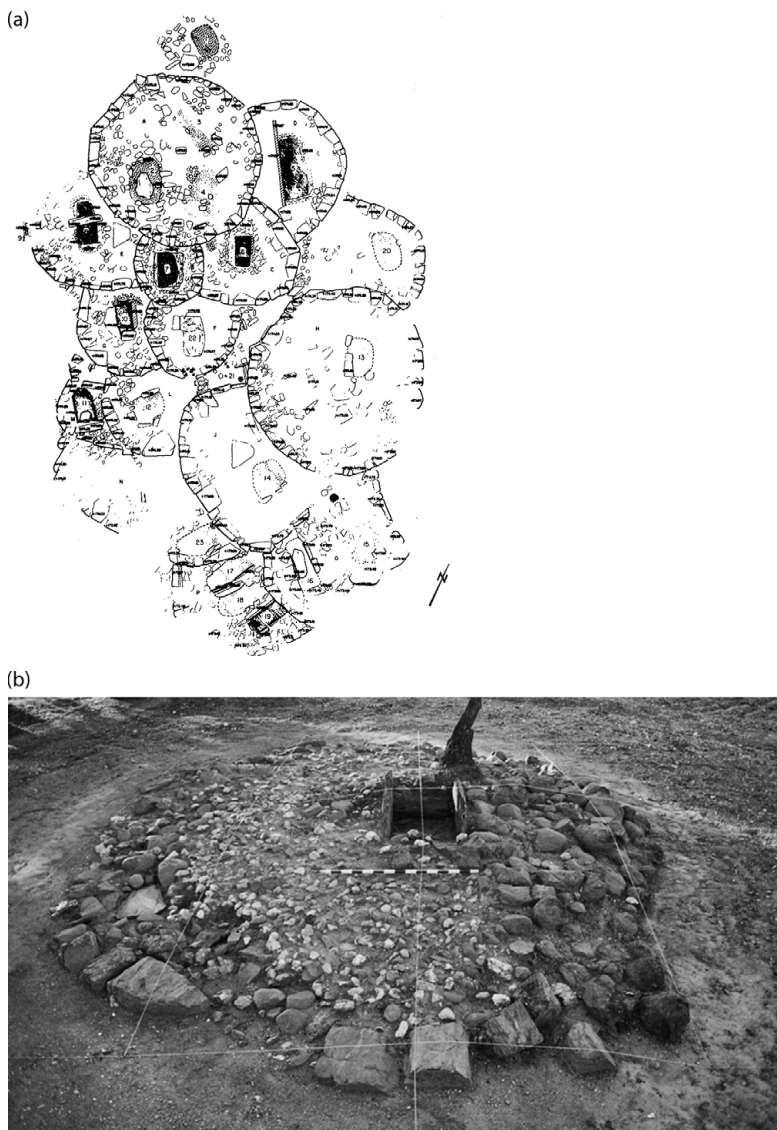


Figure 6.6 (a) Early–Middle Bronze Age cist burials. Grave complex III at Atalaia, Beja, Portugal; (b) cist burial at Talho de Chaparrinho.
 From: (a) Schubart 1975, Beilage' 5; drawing: José Raboso Amat; courtesy: DAI, Madrid. (b) Courtesy: A. Monge Soares

Dating of the hypogea from Alcaide shows that at least some were reused for over 800 years, into the Bronze Age.¹⁷⁹ Although bioanthropological studies and their dating are hampered by the poor preservation of human remains, there are sites with preserved remains.¹⁸⁰ The cemetery at Las Minitas is notable for its preservation of a large number of individuals ($n = 31$).¹⁸¹

In terms of material culture changes, the most notable is a new iconoclastic attitude with respect to design. The dazzling array of figurative and geometric

representations that were found in figurines and Bell Beaker ceramics of the third millennium BCE gave way to an aniconity; pottery was undecorated, and small-scale figurines were no longer produced. These changes likely expressed a new cosmological understanding and new esthetics. Pottery, for example, is often highly burnished, mirroring the property of metal. However, there are decorated stelae.¹⁸² They are primarily found in the Alentejo and display weapons, such as swords, halberds, and axes. Like the statue-menhirs and stelae of the northwest, they were placed close to the dead in necropoli and sometimes reused older menhirs.

The profound cultural changes that occurred in the Iberian southwest have stimulated research on possible environmental triggers. Pollen records from precoastal areas provide substantial evidence of arid conditions ca. 2,200–2,000 cal BCE, at a time when anthropogenic pressure declined.¹⁸³ To discern whether environmental changes triggered changes in economic practices, Waterman and colleagues¹⁸⁴ analyzed the isotopic signatures of ovicaprids recovered from diachronically distinct periods at Zambujal, between the third and second millennia BCE. They found statistically significant differences in the isotopic measurements between the two sample groups studied, which were likely the result of environmental change related to shifts in animal husbandry practices in Portugal during this period.

The Southeast

As in the southwest, there were both continuities and changes during this period in the southeast. Some settlements continued to be occupied. However, new settlements were established, changes occurred in economic practices, and new material culture was produced, specifically, Beaker ceramics of the Maritime and Ciempozuelos styles.¹⁸⁵ Bell Beakers in the southeast date to ca. 2,600/2,500 to 2,200 cal BCE. However, Beaker ceramics are relatively uncommon in the southeast. At Los Millares, only ten of the eighty tombs had Beaker ceramics, and, when found, they comprise only a sherd or a few from the same vessel.¹⁸⁶ At the settlement of Almizaraque, there were only about a dozen Beaker sherds. Thus, the role of the Beaker phenomenon to the cultural dynamics of the late third millennium BCE has been seen as quite different than, for example, in the Iberian southwest and northwest. Given the region's current aridity, archaeologists have explored the relationship between the environment and cultural changes.¹⁸⁷ Analyses of radiocarbon dates suggest that a demographic shift from the southwest to the southeast occurred, which could well have triggered changes in social life, including the creation of new alliances, but also conflict and social tensions.

At numerous sites in the southeast, there is evidence for continuity in settlement occupation and burial use with the incorporation of Beakers and

their associated package. At some, this extends into the early second millennium cal BCE (Argaric/Early Bronze Age). However, disruptions and transformation are also in evidence. For example, at Los Millares, between 2,500 and 2,200 cal BCE, three of the walls collapsed, occupation was reduced to the inner citadel (0.3 ha), and the site's use likely ended violently by fire.¹⁸⁸

Los Castillejos de las Peñas de los Gitanos is one site with a long history, with human activity between 5,300 and 1,700 cal BCE.¹⁸⁹ There are pre-Beaker and Beaker levels (with Maritime and Ciempozuelos wares), and groups continued use of the hilltop until the Argaric/Early Bronze Age.¹⁹⁰ During the Argaric, there was a marked shift from the herding of bovids to sheep/goat, which has been interpreted as a shift toward pastoralism as a response to arid conditions.¹⁹¹ Analyses of stable isotopic of land snails point to wetter conditions during the Neolithic and Chalcolithic occupations than today, with increasing aridity following this time.¹⁹² Diachronic studies were conducted of the C ($\delta^{13}\text{C}$) and N ($\delta^{15}\text{N}$) isotopes of the grains and the sizes of these grains from Los Castillejos to assess the relationship between precipitation, grain size, and yield. While precipitation was found to be constant, grain size and yield declined, suggesting that early agriculture in the southeast may not have been sustainable.¹⁹³

A similar trend was documented at Cerro de la Virgen. Like Los Castillejos, Cerro de la Virgen was occupied during pre-Beaker and Beaker periods, and then into the Argaric.¹⁹⁴ In his comparison of the fauna recovered in the pre-Beaker and Beaker levels of the site, which were identified by von den Driesch,¹⁹⁵ Harrison documented a marked increase in horse and decline in pig in terms of total bone weight.¹⁹⁶ This trend continued into the Argaric. The size of the horse and pig bones also decreased. Harrison interpreted these changes to reflect a degradation of grazing land and increasing aridity.¹⁹⁷ Whether the horses at the site were domesticated or not is unclear (more than 1,000 remains of equids were found). What seems evident is that they were eaten, as they were fragmented in ways that suggest their marrow was extracted/consumed. Uerpmann argued that there is evidence for the local domestication of the horse at Cerro de la Virgen (as well as at Zambujal).¹⁹⁸ Using diachronic data from the two sites, he not only pointed to a decrease in the average size of the horses, but also an increase in the variability of their size.

Continuity is also evident in the burial record. In the southeast, megaliths and caves were used through the late third millennium cal BCE and into the early second millennium BCE (Argaric). This was the case in Tomb XI at El Barranquete, which was first used as a burial place in the early fourth millennium cal BCE.¹⁹⁹

Metallurgy during the late third millennium BCE was small-scale and appears to have involved trade in small copper nodules, which are found in many settlements. These small nodules were found in domestic contexts at

Zájara and La Bastida.²⁰⁰ Over time, and into the Argaric period, copper was traded in larger ingots.

★★★

Beginning ca. 2,200 cal BCE, novel and distinctive practices emerged in the southeast during the period, known as the Early Bronze Age or Argaric. These included the establishment of new settlements with new forms of architecture. In contrast to the interspersed round huts made of stone and adobe of the Chalcolithic, Argaric dwellings were tightly packed, terraced, rectangular, and built with masonry, wood, and mud. New burial traditions emerged, most notably the practice of intramural burial. New ceramic and metallurgical technologies developed. Statistical analyses of radiocarbon dates suggest explosive population growth, which involved aggregation in nucleated sites.²⁰¹ These analyses also provide some insight into the collapse of this social formation, as there was a prolonged demographic decline that began ca. 1,800 BCE and lasted until ca. 1,550 BCE.

Because of the stark differences between the Argaric and Copper Age of the region, the distinctive practices of the Argaric (such as intramural burial), and evidence for high-status individuals in burials, archaeologists have proposed a range of models and interpretations to explain the Argaric phenomenon. Early prehistorians, such as Siret, saw these innovations as markers of colonization and diffusion (by the Celts).²⁰² With the development of radiocarbon dating, the role of indigenous peoples and local factors (environment, economic practices, social life) and models employing functionalism and historical materialism took center stage. The debate that currently dominates discussion on the Argaric revolves around whether the Argaric represents a state or not (discussed in this chapter).

Excavations and investigations of Argaric sites have generated a wealth of high-quality information about the social landscape, economic practices, metallurgy, and environment during the late third/early second millennium BCE.²⁰³ They include La Almoloya (Figure 6.7),²⁰⁴ La Bastida de la Totana,²⁰⁵ Castellón Alto,²⁰⁶ Peñalosa,²⁰⁷ Cuesta del Negro,²⁰⁸ and Fuente Álamo.²⁰⁹

Most villages were newly established and situated on inaccessible peaks. In extent, they range from 1 to 6 ha,²¹⁰ although some are much smaller, less than 0.5 ha, such as Cerro de San Cristóbal or Barranco de la Viuda. Some low-lying sites, such as Rincón de Almendricos, have been interpreted as “satellites.” Others were situated on the coast, such as Illeta dels Banyets.²¹¹ Only a few third millennium BCE sites in the southeast continued to be inhabited into the second millennium BCE. Gatas is one, where, after a violent episode ca. 2,200 cal BCE, occupation shifted to new terraces and its architecture was transformed.²¹² A few special sites, such as La Bastida, where an estimated 1,000 people lived, and Lorca, have been interpreted as capitals of political territories.²¹³



Figure 6.7 La Almoloya- Palace/governing hall.

Photo: Carlos Velasco; copyright: ASOME-UAB

Depositional contexts that contain material associated with the Chalcolithic and Argaric, such as at Cerro de San Cristóbal, have stimulated debate. Some archaeologists defend a temporal succession between the Chalcolithic and Argaric, at least in the oldest Argaric “core area” – the lowlands of Almería and Murcia.²¹⁴ Others, viewing these assemblages as cultural markers, postulate coexistence and interpret mixed contexts as evidence of cultural hybridization and resistance to Argaric society by contemporary non-Argaric communities.²¹⁵ To test this question, Bayesian statistics evaluated the temporal distance between the latest Chalcolithic and earliest Argaric contexts.²¹⁶ The results suggests that there is only a 25 percent probability for the synchronous existence of the two “cultures,” and that Chalcolithic groups likely “collapsed” prior to the onset of the Argaric. Another study focused on domestic contexts dated to ca. 2,200 BCE and included new dates on short-life samples from finely contextualized terminal and initial layers. It confirmed that the Copper to Early Bronze Age/Argaric transition occurred over a few years rather than decades.²¹⁷

Changes in settlement pattern were accompanied by new agrarian strategies. These included a later phase of extensive monoculture of cereals (predominantly hulled barley and some wheat) with some use of pulses (<2 percent) in the arid lowlands of Almería and Murcia, and alternating short-fallow crops of wheat and legumes (beans, peas) in wetter inland settings.²¹⁸

Argaric material culture is notably different from that of the third millennium BCE. The rich iconographic and decorative designs that were present in the material culture of the Copper Age disappear (although it is quite possible that images and designs were represented on textiles, paintings, or other media that do not preserve). Even if there was a shift in the media on which design was depicted, some explanation seems warranted. Might there have been a new religious ideology at work, which made taboo the depictions of beings or objects? Or was there a total rejection of the artistic practices of the earlier Copper Age, as they perhaps were associated with a troubled, conflictive, or problematic era? Most striking are the undecorated ceramics of the Argaric, particularly when contrasted to earlier Bell Beaker wares. Two kinds of ceramics appear: standardized and proficiently made burnished black vessels (often found in burial contexts) and household coarser wares (Figure 6.8).²¹⁹ Changes in metallurgy are also apparent. Copper metallurgy grew in importance for producing arsenical copper tools and weapons, and from ca. 1,800 BCE tin-bronze adornments were produced.²²⁰ The exploitation of native silver (rather than cupellated galena) flourished; local sources of native silver are found throughout the southeast.²²¹ More than 700 items of silver are known from Argaric contexts, which include silver spirals found in graves (Figure 6.9). Their weights appear to have been standardized. Silver likely served as a reference value for exchanges.²²² The role of metal recycling during the Argaric is debated. Some argue that recycling was practiced, and, because of recycling, there are relatively few metal objects for the period.²²³ However, compelling evidence based on compositional and lead isotope analyses do not suggest that recycling occurred.²²⁴

The defensive character of hilltop sites has raised the question of the degree of violence at the time. Some archaeologists argue for high levels of violence,²²⁵ while others do not see the evidence for such high levels.²²⁶ Large towers were found at Fuente Álamo and Cerro de la Encina, whereas a few sites were stone-walled, such as Peñalosa or La Bastida. La Bastida, with its imposing fortifications, was the largest economic and political center after the majority of settlements were abandoned ca. 2,200 cal BCE.²²⁷ The first settlers at La Bastida appear to have had defense in mind when the site was established and may have drawn from non-Iberian siege tactics and innovative fortification strategies (such as solid square towers), which appear to have parallels in the eastern Mediterranean. What is unclear is from whom the inhabitants of La Bastida were protecting themselves. Bioarchaeological studies suggest some violence in the form of clubbing to the head, but lethal stabbing was relatively rare.²²⁸ Postcranial fractures were found on the skeletons of children from Castellón Alto, which were likely incurred by falling from steep slopes at the site.²²⁹

Excavations of settlements reveal insights into daily life at a level of detail not available for much of the rest of the peninsula at the time, particularly for households and workshops. Tira del Lienzo, for example, had craft workshops

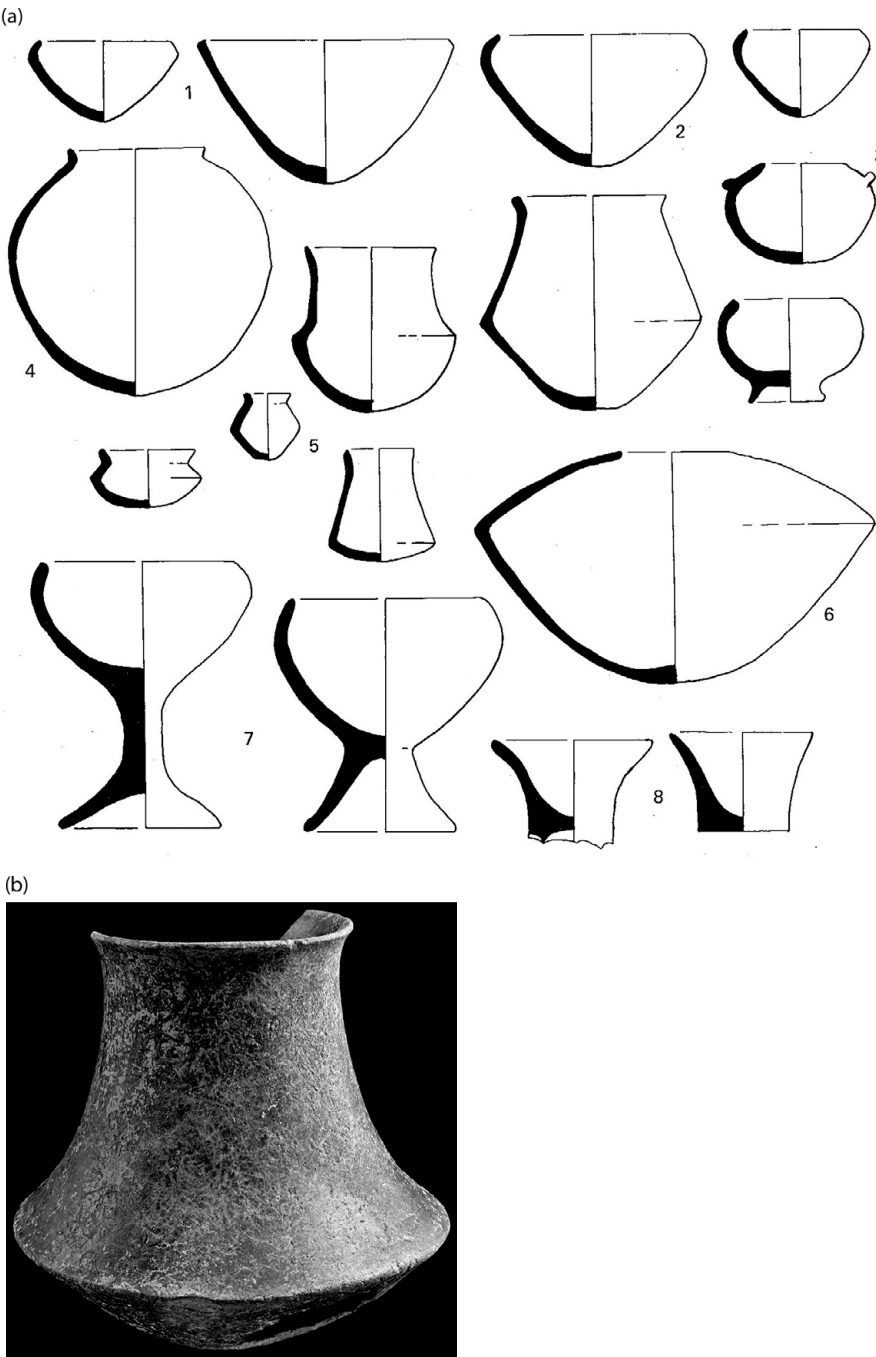


Figure 6.8 (a) Argaric ceramics, based on Siret typologies; (b) Argaric vessel from La Bastida de la Totana.

(a) Courtesy: G. Aranda. (b) Photo: J. A. Soldevilla; copyright: ASOME-UAB

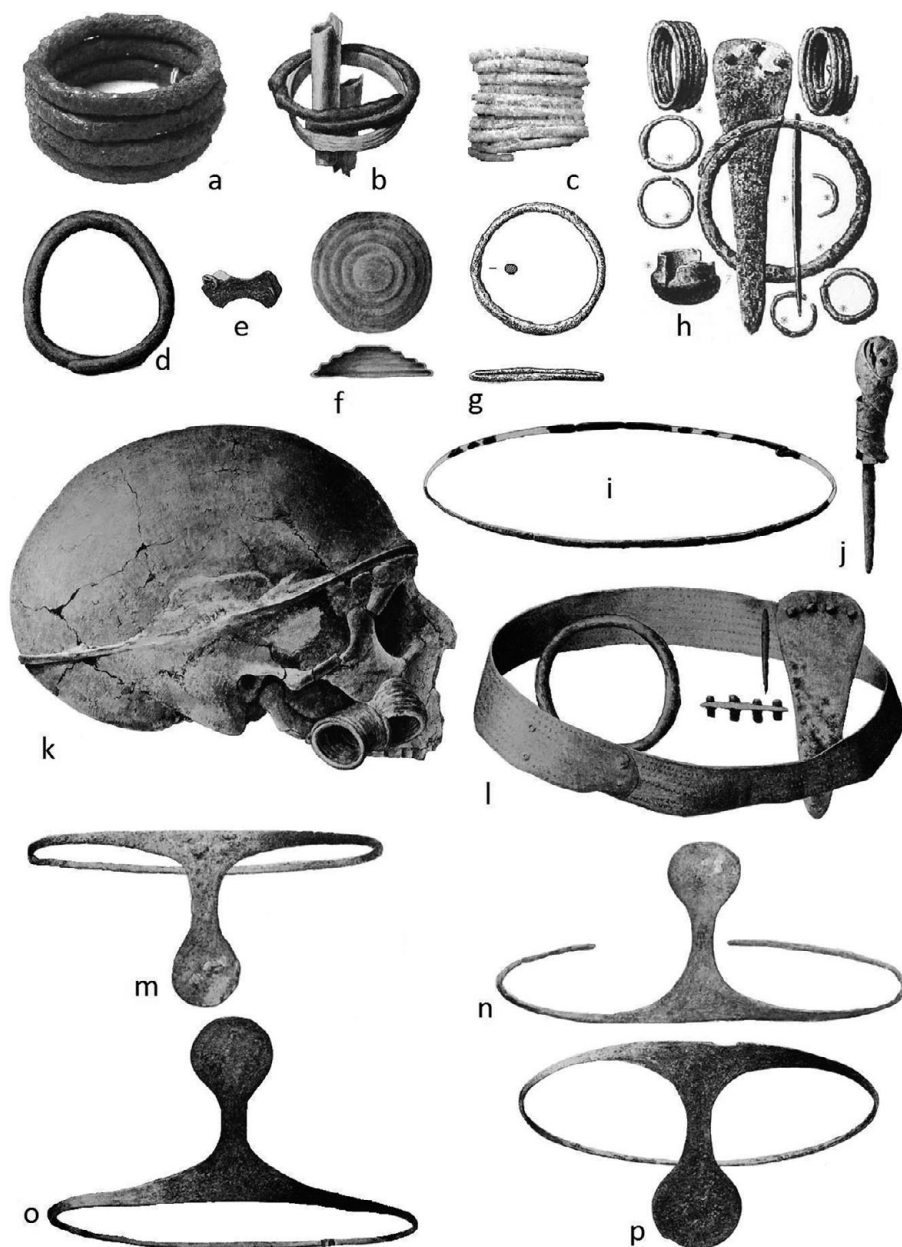


Figure 6.9 Argaric silver objects.

From: Murillo-Barroso *et al.* 2014, fig. 3

and storehouses.²³⁰ A workshop where silver valuables were likely forged and sheeted was identified, as well as evidence for textile production and cereal grinding. Smaller buildings arranged around this central workshop stored mastic seeds (possibly used in magical-medicinal remedies), barley, and probably salt. Preservation at La Almoloya was particularly high due to intense fires

during the site's final phase (ca. 1,750–1,550 BCE).²³¹ The settlement was made up of nine domestic compounds connected by narrow passageways. Within these compounds were houses with rich intramural burials, workshops, and household stores. Within one of the central complexes was a large (127 m²) rectangular building divided into two plastered rooms. The smaller room had painted walls, and the main hall (which lacked domestic or craft-work items) had a long bench that could seat fifty-five to sixty people and a podium. This room has been interpreted as a reception hall, similar to east Mediterranean palaces. Some settlements appear to have been situated to take advantage of metal sources and specialized in metallurgical activities. For example, Peñalosa has abundant evidence for metallurgical production as well as maintenance activities,²³² although it dates to ca. 1,800 cal BCE and, therefore, represents a later expression of Argaric culture.²³³

Single inhumations were most common, although double, triple, and even quadruple inhumations are known. The dead were typically buried under house floors in cists, artificial caves dug into the bedrock (*covachas*), pits, or ceramic urns (*pithoi*).²³⁴ The intimate association of mortuary and domestic spaces makes it possible for archaeologists to generate more holistic interpretations of social life than for the earlier third millennium BCE, collective tombs located outside settlements were typical. The dead of the Argaric were provided with undecorated ceramics and occasionally with personal adornments (rings, necklaces, diadems, pins and bracelets) or tools or weapons (awls, axes) made of stone, bone, bronze, gold, silver. Some lacked goods, while others had many objects. Meat portions were also offered in what were likely funerary banquets (bovids for elites; ovicaprids for nonelites).²³⁵ Males tended to be buried with halberds, and women with awls. Children and infants were treated like adults. The individual burials of the Argaric also allow for in-depth studies of identity by gender and age.²³⁶

The richest Argaric burial found to date is from La Almoloya.²³⁷ Beneath the bench in the “reception hall” was a large *pithos* containing a double burial of a man (thirty-five to forty years old) and a woman (twenty-five to twenty-seven years old), who were accompanied by an array of over thirty gold and silver items. These included four ear spools, bracelets, rings, a silver-handled awl, and a ceramic vessel wrapped in silver appliqué, which were likely produced at the silversmith's workshop at Tira del Lienzo.²³⁸ The female had a silver diadem on her head. There are only four other such diadems known in the Argaric world, and they were all found at El Argar. The two individuals shared some unusual dental traits, which suggest that they were closely related. The male had scarring on his cranium (showing healing), and the woman had suffered from an inflammation or infection of her lungs, which left marks on some ribs.

Bayesian statistics on dates of twenty-three Argaric double burials from a series of sites (Fuente Álamo, Cerro de la Encina, Illeta dels Banyets, etc.) have

shed light on the relationship between the individuals in these graves. These analyses revealed that these individuals tended to die over two decades apart, suggesting they were related by descent rather than affinity/marriage.²³⁹ In the majority of these double burials, the female was the individual buried first, which is suggestive of matrilocality.

The East and Northeast

Changes in settlement and burial practices between the early and late third millennium cal BCE in the east and northeast, or between pre-Beaker and Beaker contexts, involved primarily the incorporation of new material culture. A variety of Beaker styles – with Salamó ware being the local version – are found in Catalonia, although Maritime and Ciempozuelos styles are also known. Unlike other regions, copper metallurgy generally coincided with the appearance of Beakers in the east and northeast.

In Valencia, communities continued using settlement and burials between the Early and Late Chalcolithic (or Neolithic IIC, *horizonte campaniforme de transición*).²⁴⁰ These sites included ditched enclosures (with negative features) on lowland plains and settlements on prominent uplands. The dead, some of whom were accompanied with Bell Beaker ceramics and/or associated Beaker objects (V-perforated buttons), were inhumed in pits, hypogea, and caves, some of which had been used since the Neolithic.²⁴¹ The spread of Beaker ceramic forms and styles, and their imitations in the region has been attributed to an expansion of interregional networks.

One important site is La Vital, located on the terraces of the Serpis River and dated to 2,800–2,300 cal BCE. There, pit burials with Bell Beaker materials were found incorporated into the living space.²⁴² One striking fact is that there were relatively few burials in the 115 structures excavated. This suggests that only a very small number of people received these rituals at death. One of the pit burials (no. 10) housed a young female next to a bovid. Artifacts from La Vital show similarities to those found in the region from the second half of the fourth millennium cal BCE, attesting to material continuities. Beaker ceramics of the Maritime type were found in one of the burials, dated to 2,400–2,200 cal BCE. None of the regional wares (such as Ciempozuelos) were found, however, as the site was apparently abandoned before their adoption. In addition to Beakers, another novelty that was adopted was metallurgy.²⁴³ Copper droplets and crucibles were found as well as finished products, such as a copper axe and awl. Although there was no evidence for in situ smelting, geochemical analyses suggest that these finds were manufactured locally with imported raw material. Their isotopic signatures are identical to copper found in sites in Almería and Murcia, as well as the ores found there.²⁴⁴ It is believed that metallurgy predated Beakers at La Vital.²⁴⁵

Villa Filomena is another important site with pit burials, located on the Levantine Coast on the banks of the Rio Mijares.²⁴⁶ The site, now largely destroyed, was discovered by D. Manuel Llorens in 1917 following earth-leveling for his estate. In 1922, the geologist Vicente Sos Baynat (1895–1991) supervised excavations.²⁴⁷ The presence of corded Beakers (AOC) and mixed decoration (Cord-Zoned Maritime)²⁴⁸ distinguished the site such that it was included in the first synthesis of Iberian Beakers published by Castillo in 1928.²⁴⁹ In recent years, all the material from the site housed in the Museo de Castellón (Museum of Castellón) was studied and published.²⁵⁰ Thirty-five negative structures of different sizes were identified; in nine of these, human remains were recovered. Beaker and non-Beaker ceramics, flaked and polished stone tools, bone items, and personal adornment predominated.

Metallurgical practices appear to be independent of those in southern Iberia and are closely linked to southern France, as the *chaînes opératoires* and finished products from both sides of the Pyrenees are similar. Their chemical compositions have a similar suite of atypical elements (e.g., copper, antimony, silver, lead) and the objects are similar in form (e.g., biconvex gold beads, copper tanged daggers).²⁵¹ Evidence for local metallurgy is clear, however. Investigations in the Monsant Basin have identified copper mines and metallurgical sites that were in use during the late third and early second millennia cal BCE, and isotopic studies of the ores indicate that they are similar to artifacts in the area.²⁵² At the La Solana de Bepo Mine, dozens of macrolithic tools were recovered; they were predominantly picks, and some were found with copper residue on their surfaces. At another mine, La Turquesa (also known as Mas de les Moreres), another large set of mining tools was found. Close to these mines was La Coveta de l'Heura, a paradolmenic shelter and a site with a distinctive biography. It was used as a collective burial, a production site for flint arrowheads, as well as a copper workshop.

In the late third millennium BCE, at the beginning of the Bronze Age, two cultural trajectories can be discerned: one, along the Levantine Coast, and the second, along the middle-lower Ebro, in Catalonia.

Along the Levantine Coast, from the Iberian Range to the limits of the Argaric culture, this period is known as the *Bronce Mediterráneo* (2,250–1,500 BCE) or *Bronce Valenciano*.²⁵³ At ca. 2,200 BCE, new upland permanent settlements were established, which were often fortified.²⁵⁴ The establishment of these hilltop occupations took place ca. 2,200–2,150 BCE, and occupations lasted for several centuries.²⁵⁵ Groups occupied caves, such as Mas d'Abad, and small pits, such as Mas d'en Sanç d'Albocàsser.²⁵⁶ The dead were typically inhumed, and placed in both intramural and extramural burials within natural or artificial caves, such as at Cabezo de la Escoba.²⁵⁷ Groups sometimes buried their dead in spaces that had been used in earlier times; for example, burials

(a)



(b)



Figure 6.10 (a) Early Bronze Age bilobed vessel from Cova M del Cingle Blanc; (b) Early Neolithic bilobed vessel from Cova de l'Or.

(a) From: Soriano and Amorós i Gurrera 2014/Reus Museum 5006; photo: F. X. Fernández; courtesy: Archive of the Reus Museum. (b) Courtesy: Museu de Prehistòria de València

continued at Cova de la Pastora.²⁵⁸ Ceramics were predominantly carinated, undecorated, and burnished, but some were decorated with incised, impressed, thumb-impressed, or appliquéed rope designs.

Communities in eastern Iberia interacted with those to the south, in the Argaric zone, and to the north. For example, ivory and bone items were acquired from the south.²⁵⁹ There were also contacts northward. Bilobed vessels (*vasos geminados*), a distinctive feature of settlements of the early second millennium cal BCE, although few in number, were found in 75 percent of settlements (Figure 6.10a).²⁶⁰ They are found on the Levantine Coast at ca. 2,150 cal BCE and reached the northeast/upper Ebro ca. 1,900 cal BCE.

Their functions are unknown. In the Levante, they are primarily found in domestic contexts (although cases are known in burials, such as Cabezo Redondo). In the northeast, they tend to be found in funerary or ritual contexts. Bilobed vessels were also produced during the Early Neolithic in Valencia (Figure 6.10b). It is tempting to consider that they were reappropriated in an archaizing practice.

Among the newly established settlements is Terlinques. Terlinques is perched on a 70 m hill that overlooks a plain where Lake Villena used to exist (the lake was drained in the nineteenth century). Following its discovery in 1952 by José Maria Soler (1905–1996), excavations were conducted in 1969, 1970,²⁶¹ and between 1997 and 2013.²⁶² Terlinques had a long history, spanning the late third millennium to mid-second millennium cal BCE, and a series of architectural transformations accompanied this history. One of the most spectacular finds dates to its earliest phase, between 2,100 and 1,900 cal BCE. From this phase, archaeologists discovered a large (15–20 × 4–5 m) building (UH 1), with a masonry bench built into the inner wall, another low elongated bench made from clay in the center of the building, a hearth, and evidence for different activities. For example, inside a sack filled with cereals was also found a set of wooden spindles or bobbins with yarn made of rush (*Scirpoides holoschoenus*) (Figure 6.11).²⁶³ Stable carbon isotopic values of the cereals suggest irrigation.²⁶⁴ The exceptional preservation of these organic materials was due to their carbonization from one of the fires.²⁶⁵ Also found was a mass of copper nodules, which was partially melted owing to a burning event ca. 2,000–1,950 cal BCE.²⁶⁶ Dated to a later phase, between 1,700 and 1,500 cal BCE, were fifteen structures and a compacted earthen street to which these structures all had access. In the largest of these houses (UH 12) were found a concentration of grinding stones, large ceramic vessels, and many hammer stones. The other houses had objects related to food consumption and water storage.

Dramatically located on a small coastal promontory is Orpesa la Vella.²⁶⁷ Dates for the site indicate a possible pre-Bronze Age occupation in the mid-fourth millennium cal BCE, although most dates concentrate between 2,100 and 1,500 cal BCE. Its location is unusual, and the evidence found for metallurgical production – such as crucibles, slag, and molds – suggest that there was a need to sequester this activity, perhaps owing to its luxury status.

Additional insights into metallurgical practices were provided from investigations at the hilltop settlement of Santa Llúcia, dated to 2,200–1,800 cal BCE.²⁶⁸ Although the site was severely disturbed owing to Medieval and later constructions, including a seventeenth-century hospice, a small hoard of metal objects was found inside a small, constricted neck ceramic vessel (ca. 5 cm in width). These included copper rivets, a bar ingot, a sheet, and copper prills, whose total weight was 4.11 g (Figure 6.12). Next to the vessel was a small copper riveted dagger (5.75 g). Metallurgical and isotopic analyses suggest that

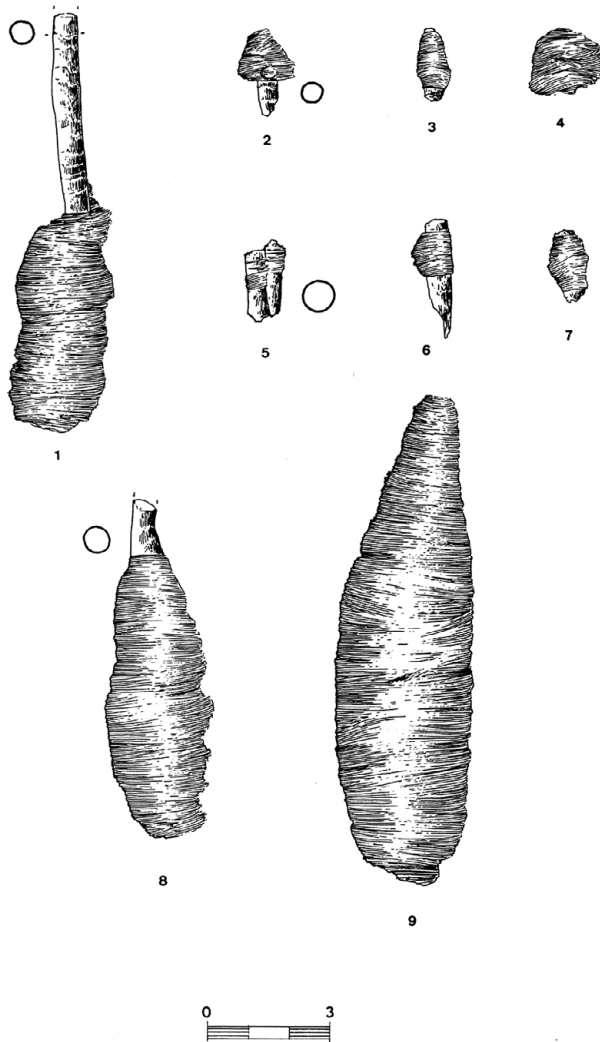


Figure 6.11 Wooden spindles with bobbins from Terlinques.

From: Jover Maestre *et al.* 2001, fig. 3

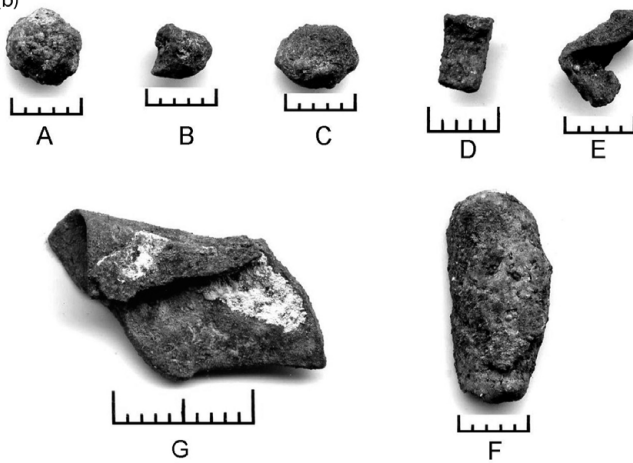
two processes may account for the acquisition of these metal goods (and those in the region). One drew on local ore sources mixed with some recycled metal for the production of small items (such as rivets). A second involved inter-regional trade in metal destined for prestige goods, such as the dagger (whose edge was found so worn that it was probably at the end of its use life). That the total weight of the hoard is modest (9.86 g) suggests small-scale metallurgical production at the site.

Further to the north, along the middle-lower Ebro/Catalonia, the period between the late third to early second millennia cal BCE experienced similar developments as in the south, but with some differences. A distinctive late Bell

(a)



(b)



(c)



Figure 6.12 (a) Small ceramic vessel with metal finds; (b) metal objects found in a vessel; (c) copper dagger found close to a ceramic vessel, from Santa Llúcia (Castellón).
From: Montero-Ruiz *et al.* 2017, (a) fig. 3; (b) fig. 4; (c) fig. 5

Beaker fine ware known as Arbolí ware was produced ca. 2,000 cal BCE.²⁶⁹ It is characterized by bowls decorated with incised and impressed motifs, such as garlands. Arbolí vessels are also found in the Cantabrian region, the upper Duero, and Alicante.²⁷⁰

The first bronze alloys of Iberia were produced in the northeast during the early second millennium cal BCE.²⁷¹ These bronzes were likely related to exchange networks that linked groups in the northeast with other cultural spheres in Western Europe. Bronze awls, for example, were found at the walled site of Monte Aguilar in the Bardenas Desert (Navarra) and date to ca. 1,800 cal BCE.²⁷² Although the tin-bronze objects increase in frequency, unalloyed copper objects continue to be made and used.²⁷³ There is evidence for open-air mining of copper and more intensive exploitation of minerals, as suggested by the larger numbers of specialized tools, such as picks and hammers, found at these sites.²⁷⁴ By 1,600 BCE, metallurgical production was clearly linked to social prestige, as evidenced by the burial of a metal-worker (fourteen to twenty-four years old) at the mine of Forat de la Tuta.²⁷⁵

Entangled with these new expressions of material culture and specialized production was agricultural intensification and sedentism.²⁷⁶ Settlements were situated on high rocky elevations, such as the Serra de l'Encantada, and structures were constructed of stone masonry, for the first time.²⁷⁷ Low-lying pit sites were also established, with silos, habitation structures, and burial pits. These include El Pla de Tabac I,²⁷⁸ Lirians del Mas,²⁷⁹ and Minferri.²⁸⁰ Groups continued to occupy caves, such as Cova del Frare.²⁸¹

At Can Roqueta II, dated to 2,300–1,300 cal BCE, 121 pits dated to the Early Bronze Age were recovered; fifty of these appear to have been for domestic use (i.e., storage pits), and forty-nine were burials; the remaining were of an indeterminate function.²⁸² The majority of the burial pits housed one to three inhumations. Also found were three contemporary hypogea used as collective burials for primarily infants and juveniles, although adults were also housed. These hypogea were interpreted as the burial ground for people who died of infectious disease. Domestic animals (bovids, ovicaprids, pigs, and dogs) and a few bones of wild animals (birds and carnivores) were included as food sacrifices for some of the individuals in the pits and hypogea, which may reflect some kind of social differentiation. The few bones of wild animals (red kite, crow, pheasant, coot, red fox, and dog) have been interpreted as symbolic or of totemic importance, given that the bones do not yield much meat nor are typically eaten by people; indeed, these remains were not found with any cut marks.²⁸³

In the middle Ebro Basin, a similar settlement pattern can be found. Groups occupied pit sites, hilltops, and caves. In Navarra, over forty low-lying pit sites are known.²⁸⁴ These sites have subsoil features that include wells, silos, post-holes, and wattle-and-daub huts. Hilltop sites, some with stone masonry and timber buildings, include Ciquilines IV,²⁸⁵ Monte Aguilar,²⁸⁶ Moncín,²⁸⁷ and Majaladares.²⁸⁸ Cave sites include Cueva del Moro.²⁸⁹

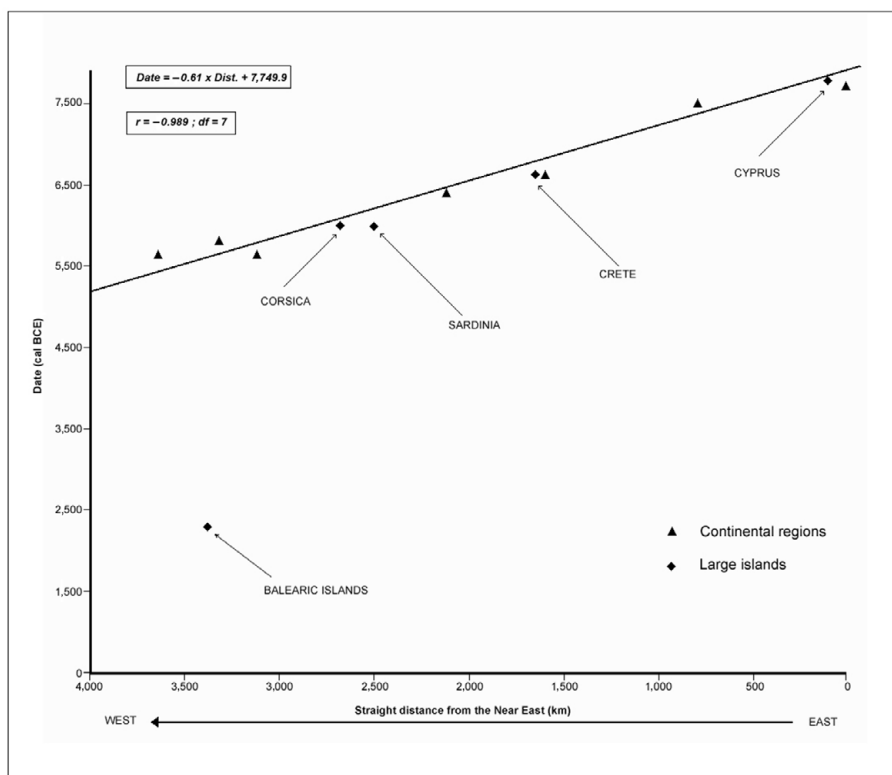


Figure 6.13 Relationship between distance from Middle East and date by settlement of islands.

From: Lull *et al.* 2014c, fig. 4

The Balearic Islands

The Balearic Islands were first settled in the mid-third millennium BCE and were some of the last Mediterranean islands to be inhabited (Figure 6.13). Their late colonization may be related to their remoteness and the fact they were not included in Neolithic exchange networks.²⁹⁰ Why they were settled at that time may be due to increasing social inequities and climate shifts on the mainland that spurred emigration.²⁹¹ Perhaps the first settlers were refugees. What is clear is that the settlers established themselves in undefended habitats and did not make weapons, unlike their mainland ancestors. They also maintained collective burial practices, while groups on the mainland had begun burying their dead in individualized tombs.

The Balearics are made up of four inhabited islands: Mallorca, Menorca, Ibiza, and Formentera. Mallorca (2,640 km²) and Menorca (701 km²), known as the Gymnesian Islands, are the largest, and their archaeology is better known than that of the more southerly islands of Ibiza (570 km²) and Formentera (83 km²), known as the Pityusic Islands (Figure 6.14). The landscapes and ecologies

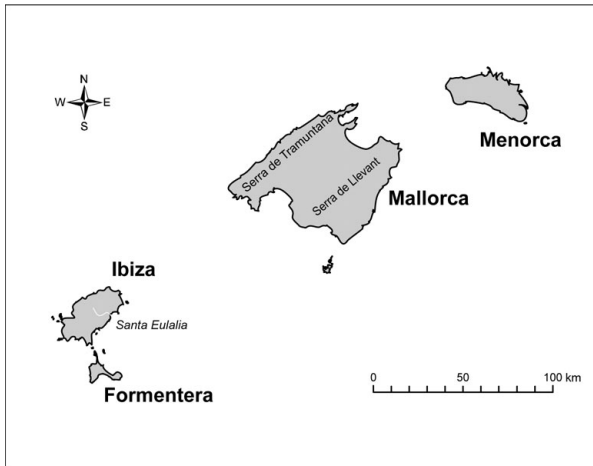


Figure 6.14 Geography of Balearic Islands.

Drawing: Angela Collins and Rasmus P. L. Schlütter

of the islands are varied.²⁹² Mallorca has a rugged topography dominated by two limestone ranges: the Serra de Tramuntana and Serra de Llevant. The Serra de Tramuntana runs parallel to the northwest coast of the island; its highest peaks are the Puig Major (1,445 m) and Puig de Massanella (1,348 m). Running parallel to the southeast is the lower Serra de Llevant, with its peak at Puig Morey (562 m). Between the serras is a fertile plain. The island has copper ores in the local limestone and dolomite, which were first mined in the early second millennium cal BCE.²⁹³ Mallorca can be seen from the mountains by the coast of Barcelona (ca. 180 km), but only when the sky is particularly clear. Approximately 40 km to the north is Menorca, which is smaller and flatter. The southern half of the island is dominated by Miocene limestone, while the northern half is comprised of older Devonian limestones associated with the mountain-building episodes that also formed the Ampurdan Mountains in Catalonia. Menorca also has copper ores, such as those at the Sa Mitja Lluna Mine, which were first exploited ca. 1,500 cal BCE.²⁹⁴ Ibiza has low hills (under 500 m), open plains, a water table that can be accessed by wells, and the only river in the Balearics – the Santa Eulalia. The island can be seen from the coast of Alicante (ca. 80 km). On Formentera, water is scarce, owing to the nature of its calcareous geology. Flint is locally available on all of the islands and was exploited for tools.²⁹⁵ Sandstone and microconglomerates are found in northern Menorca and in the Serra de Tramuntana in Mallorca (Estellencs, Banyalbufar); the earliest inhabitants of the islands used these stones to make grinding stones and hammerstones.²⁹⁶ At the time of their initial settlement, forests of oak and pine covered the islands.

Despite the relatively small size of the Balearics, there is a remarkably large number of radiocarbon dates available from excavations, totaling around

1,000.²⁹⁷ This situation is due in large part to the work of William Waldren (1924–2003). William Henre Waldren took an unusual pathway to Balearic archaeology. Born in New York in 1924 during the Depression, Waldren went to art school, and in World War II, was trained in map-making and technical drawing. He also happened to be a talented figure skater and toured with Sonja Henie’s *Holiday on Ice* show in 1948. Waldren then went on to study art at the Académie Julien in Paris, where he had a career painting in abstract expression. In 1953, on a vacation from his schooling, Waldren visited Deià on Mallorca, which was becoming a retreat for artists and writers. Enchanted by the island, Waldren decided to settle in Deià, where he continued to paint. Upon the discovery of Son Muleta, his lifelong ambition to be an archaeologist was sparked. Helped by friendships with local landowners and supported by volunteers (and, later, paid volunteers through Earthwatch), Waldren began excavations in the 1960s and 1970s. In 1962, with his wife Jackie, he founded the Deià Archaeological Museum and Research Centre in a converted mill. To help provide professional credentials for himself, he enrolled at Oxford for his PhD in 1975, which he completed in 1981. Waldren’s excavations, which generated the first radiocarbon dating series for the islands, and the international conferences he organized helped to establish the foundations of Balearic prehistory and its chronology.²⁹⁸

When the first settlers arrived on the Balearic Islands has long been a topic of debate.²⁹⁹ Waldren’s excavations at the cave of Son Muleta in northern Mallorca recovered human remains, some supposedly associated with bones of *Myotragus balearicus* and dated to the sixth and fifth millennium cal BCE. Later excavations at the Son Matge rock-shelter produced remains of *Myotragus*, which were believed to have been modified by people in an effort to domesticate them.³⁰⁰ *M. balearicus* was a dwarf goat-like artiodactyl found on Mallorca and Menorca, which is now extinct (Figure 6.15).³⁰¹ The early association of *Myotragus* with humans has been disproven, and it has been

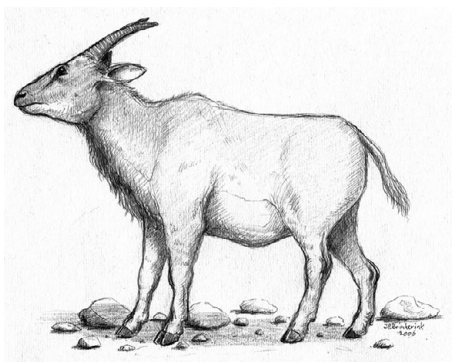


Figure 6.15 *M. balearicus*.

Drawing: J. P. Brinkerink; from: Van Strydonck 2014

shown that the “clipping” was the result of other animals, such as birds of prey, gnawing on the bones for minerals. The early dates for the human remains has also been revised.³⁰² Nonetheless, Waldren’s findings demonstrated that *Myotragus* had not gone extinct prior to the end of the Pleistocene, but survived until the Holocene. The Pleistocene extinction of *Myotragus* was proposed by Dorothea Bate (1878–1951), who first discovered their bones at sites such as Coves dels Coloms on Mallorca.³⁰³ DNA studies have shown that *M. balearicus* is actually more closely related to sheep than goat.³⁰⁴

The current consensus is that the first occupation of the Balearics dates to 2,500–2,200 cal BCE in Mallorca during the pre-Talayotic period.³⁰⁵ People who used Bell Beaker ceramics settled the island, and they came, most likely, from northeastern Spain or along the Gulf of Lion. Somewhat later, ca. 2,100/2,000 cal BCE, people settled Menorca. The earliest settlers of Mallorca established themselves in caves and rock-shelters, where they also buried their dead,³⁰⁶ as well as in small semipermanent and undefended habitats in fertile landscapes, where they lived in circular houses with stone foundations.³⁰⁷ Their Beakers were decorated with incised bands, zigzags, and checkerboards, which show affinities to Beakers of the Pyrenees. Vessel forms include carinated vessels and bowls. Copper metallurgy was carried out using ores from the Tramuntana Mountains.

The building of monumental stone structures, such as dolmens and hypogea, only began on Mallorca and Menorca ca. 2,100/1,900 cal BCE, during what was the Early Bronze Age on the mainland or the epi-Beaker/dolmenic period on the islands. At this time, groups also began to settle the smaller islands of Ibiza and Formentera.³⁰⁸ Caves and open-air sites continued to be used as habitats as well as burial spaces.³⁰⁹ The dolmens had rectangular chambers, which were entered by a short corridor and covered by a tumulus 7–8 m in diameter. These include Son Bauló de Dalt and S’Aigua Dolça on Mallorca,³¹⁰ Ses Roques Llises on Menorca,³¹¹ and Ca na Costa on Formentera.³¹² The hypogea, which appear first in Menorca, had megalithic constructions with stone façades or round chambers. These include the two monuments at Biniai Nou.³¹³ In these tombs, the dead were inhumed collectively. Grave goods were not abundant or particularly lavish, and they included ceramic bowls, copper/bronze daggers, bone buttons, pendants, and wristguards. The construction of the islands’ large and famous stone naviformes and talayots did not begin until 1,600 cal BCE and continued until ca. 550 cal BCE.

One of the most important sites for our understanding of the earliest settlers of the Balearics is Son Matge, on Mallorca (Figure 6.16).³¹⁴ This rock-shelter has a deep stratigraphy dating from 2,300 cal BCE up until historic times, when it was used as a stable. At the base were found remains of *Myotragus*. In a later level, dated to the late third millennium cal BCE, the site was largely used as a workshop for the production of diverse goods. In a central location in the rock-shelter, Bell Beaker materials were found, including a sherd with copper oxide, V-perforated buttons, and wristguards. In the mid-second millennium

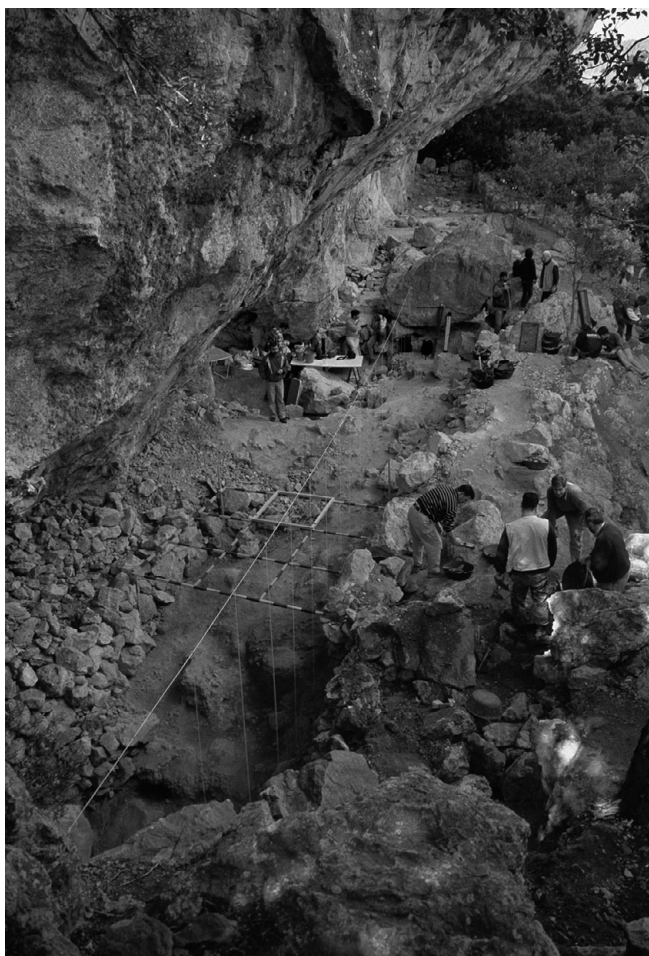


Figure 6.16 Son Matge rock-shelter.

Courtesy: M. Van Strydonck

cal BCE, the rock-shelter was used as a burial where the dead were buried individually and as a site for the manufacture of bronze.

The complex of Son Ferrandell-Olesa, also on Mallorca, is another key site comprised of an open-air settlement and a dolmen, dated 2,200–1,800 cal BCE.³¹⁵ The settlement has a stone-walled compound enclosing an area of ca. 3,600 m², and within it were found two apsidal houses and a clay-lined water channel that likely functioned as a water management system. The dolmen is 70 m to the west of the compound. Within the settlement area, large numbers of ceramics, including Beakers, were recovered. The dolmen is distinctive in a number of ways. It has a stone porthole entrance and is oriented to the northwest, in contrast to other Balearic dolmens that open to the southwest. Few human remains were recovered within its chamber, most likely due to agricultural activities. Ceramics, including Beakers, a possible wristguard, a bone button, and copper fragments were found.

The relationship between the first settlers of Mallorca and Menorca, and the extinction of *M. balearicus* has been another major debate. Some have suggested climatic factors,³¹⁶ while others have supported a human role.³¹⁷ A recent study dating the most recent *Myotragus* to 2,830–2,470 cal BCE (RICH-21771:4032 $\pm$ 32 BP, from Cova des Marmol) and the earliest occupation of Mallorca through a domestic caprid bone to 2,470–2,210 cal BCE (RICH 21853:3884 $\pm$ 36 BP, from Cova de Son Pellisser), strongly suggests a causal relationship between the colonization of the islands and its extinction.³¹⁸

Following an early phase of Balearic archaeology that focused on chronology, more recent investigations are assessing other questions, such as the nature of economic strategies on the different islands and their relationship to local ecosystems.³¹⁹

The Interior

Given the vastness and cultural diversity of the interior of the peninsula, the northern and southern regions are considered separately.

NORTHERN MESETA

The appearance of Ciempozuelos Beakers and associated Beaker items has dominated the literature.³²⁰ At this time, groups, particularly along the Duero, increasingly chose elevated and more dispersed locations to establish their settlements. Some, such as Pico de la Mora, had defensive earthworks.³²¹

The dead, usually buried individually, were housed in a range of burial structures. They were also placed in isolated burial pits and under tumuli. At Fuente Olmedo, there is compelling evidence for elite individuals.³²² Inside an oval pit, nearly 1 m deep, a young (seventeen- to eighteen-year-old) male was found accompanied by a lavish array of valuables. He was buried with Ciempozuelos-style ceramics at his feet, which included a beaker, bowl, and carinated bowl (Figure 6.17). The carinated bowl held beer, as cereal phytoliths and other residues were found inside. On his head was a gold diadem, and near his arms were copper weapons (a dagger and eleven Palmela points), a sandstone wristguard, and a tanged and barbed arrowhead. This male represents one of the clearest examples of an individualized elite during the late third millennium cal BCE in Iberia.

In the region, the emergence of these elites has been tied to the extraction and processing of salt. For example, the largest assemblage of Beakers in Iberia (over 1,000 fragments) was found at Molino Sanchón II, a brine-boiling site in the Villafáfila Lagoon and dated to 2,400–2,000 cal BCE.³²³ The nature of the status and power of these elites has been debated. Garrido-Pena has suggested that polities were hierarchical, yet unstable, and that status was acquired, in part, through entrepreneurial activities.³²⁴

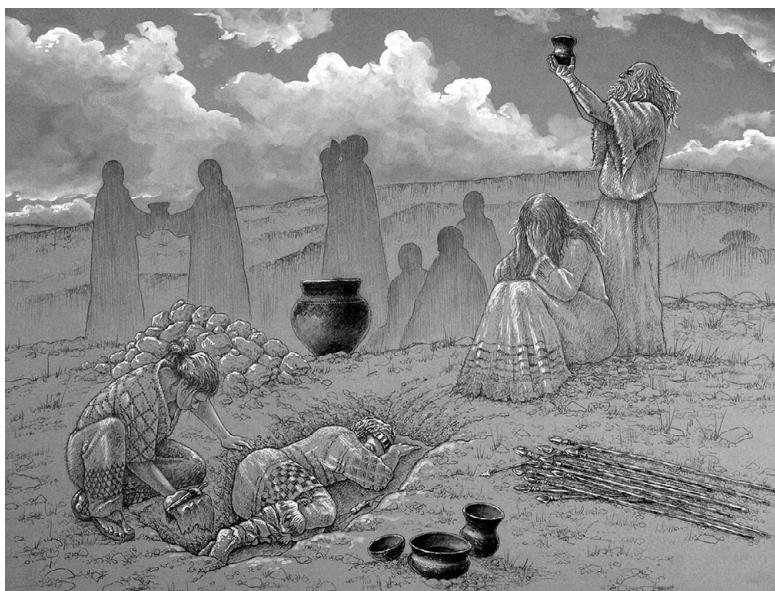


Figure 6.17 Fuente Olmedo burial.

Drawing: Luis Pascual Repiso; from: Rojo-Guerra *et al.* 2006a; courtesy: R. Garrido-Pena

Around 2,300 cal BCE, new cultural practices and demographic shifts, along with new material culture, swept the northern Meseta. Cabré associated the new material culture to the El Argar culture, based on sites such as El Castillo de Cardenosa.³²⁵ Later researchers saw enough differences to define it as a distinctive cultural area, naming it the “Parpantique Group” (2,200–1,900 BCE), after the settlement of El Parpantique.³²⁶

Among the many cultural changes were new ceramic forms and treatments. These include coarse carinated vessels and large jars featuring “S” profiles with flat bottoms. These vessels were decorated with fingernail impressions and applied treatments. Some Arbolí and bilobed vessels are found.³²⁷ Cheese strainers are regularly found on sites. Flaked lithics continue to be used, most commonly in the form of sickle blades, made from quartzite. Stone hammers were also utilized and associated with mining activities, such as at El Castillejo de Cardenosa.³²⁸

Little changed in metallurgical practices, however. Objects continued to be made from arsenical copper, such as arrowheads, awls, and flat axes.³²⁹ Although cassiterite outcrops are found in the region, their presence alone did not trigger tin-bronze alloying. The production of tin bronzes only began in the region during the late second millennium BCE.³³⁰ Argaric-style swords are found in some sites,³³¹ which may suggest a military ethos was adopted by some groups. This is also apparent in the statue-menhirs in the western zone, which feature halberds and swords.³³² The appearance of the first silver ornaments reflects the

(a)



(b)



Figure 6.18 (a) Burial of young girl at Santioste, during excavation in 1990 directed by Ana Viñé; (b) finds associated with the Santioste burial.

Courtesy: Museo de Zamora (Museum of Zamora), Junta de Castilla y León

creation of new exchange networks. Silver beads (as well as an ivory button) accompanied a thirteen- to fourteen-year-old girl buried at Santioste, near the salt exploitation center surrounding Villafáfila Lagoon (Figure 6.18).³³³ The valuables that accompanied this young girl at death strongly suggest the emergence of ascribed status or hereditary ranking at this time, which is also indicated by wealthy child burials in the Argaric world.

Population shifts occurred, and nucleated habitats were established. Prominent hills in marginal uplands become the preferred settlement location, which was likely related to new herding-oriented strategies and climatic shifts, perhaps to avoid swampy lowlands.³³⁴ Lowland pit sites were also settled.

Some caves were inhabited and their walls engraved, such as Cueva Maja.³³⁵ Some zones with dense third millennium cal BCE occupations were depopulated: Ribera del Duero decreased from thirteen Bell Beaker sites to five EBA sites³³⁶; at the Amblés Valley, there was a change from sixty-one Chalcolithic to seven EBA sites.³³⁷ In other regions, such as the Alto Duero, however, the number of sites increased.³³⁸

At some of the high elevation farmsteads, such as Los Torojones and El Parpantique or Pico Romero, rectangular wooden huts and underground plastered silos were recovered.³³⁹ Their superimposed floors of mud suggest the repeated renewal of dwellings.³⁴⁰ In the western Spanish Duero Basin, steep granitic crags were occupied, such as Los Barrios de Luna³⁴¹ and Castro de Ribadelago.³⁴² At the settlement of Las Costeras, the remains of rectangular houses with stone foundations and walls made of mud and timber frame were recovered.³⁴³ An unusual concentration of thirty early second millennium cal BCE low-lying sites is known at Villafañila Lagoon, where salt exploitation, likely facilitated by dry conditions, occurred.³⁴⁴

Inhumations in pits and natural caves were the typical burial rituals, although some unusual practices were documented at the Atapuerca sites. At El Mirador, human remains were boiled, defleshed, and cannibalized.³⁴⁵ At Cueva Mayor, horses were found.³⁴⁶

As noted earlier, the question of whether Iberian horses were domesticated by the Middle Holocene remains open to debate,³⁴⁷ and the Atapuerca sites have contributed to the discussion. At El Mirador, horse remains from Early Neolithic to Bronze Age levels ($n = 92$) were analyzed with attention to their frequency, mortality patterns, and pathologies that might suggest exploitation or the use of bits. Results were inconclusive. Similar studies were conducted of equids ($n = 260$) from the Bronze Age levels at El Portalón.³⁴⁸ While it was difficult to determine whether these horses were wild or domesticated, their butchery marks and fracture patterns indicate that they were eaten.

SOUTHERN MESETA

Contract excavations and research projects using interdisciplinary approaches have shed new light on Beaker-period burials and settlements in the region.³⁴⁹ Beaker ceramics include those of the Maritime, Ciempozuelos, and Dornajos styles (with incisions on both sides).³⁵⁰ The richness of Beaker finds in the region is likely due to its location in the mid-Tejo Valley, which provided access to the interior of the peninsula as well as the Portuguese Estremadura.

Numerous settlements established in the late fourth/early third millennium BCE, including ditched enclosures, continued to be occupied into the late third millennium cal BCE and incorporated Beaker materials with little significant change to lifeways.³⁵¹ For example, at Camino de las Yeseras, Beaker-period houses – hut-like structures with sunken floors and oval in form – were

found in the southeast sector of the settlement.³⁵² Some were used for a long time, while new ones, with Bell Beaker materials and smaller than the older ones, were also constructed.

To house the dead, older megaliths were sometimes used, as in other regions. For example, at the *tholos* of La Sima, several Beaker burials were deposited in its entrance.³⁵³ Sometimes, the dead were buried in individual or collective tombs in pits, artificial caves, or hypogea excavated deep into the subsoil. The most notable are the tombs excavated into the Tertiary cliffs at Valle de las Higueras³⁵⁴ and Humanejos.³⁵⁵ Indeed, the type-site of Ciempozuelos – Cuesta de la Reina/Cerro del Castillo – was likely composed of similar artificial chambered caves. Sometimes, the dead were buried within the settlement area, or even beneath the living space. This was the case for all the Bell Beaker tombs at Camino de las Yeseras. However, they also shared these spaces with other tombs that did not have Bell Beaker grave goods (Figure 6.19).³⁵⁶ What is notable about the mortuary areas at the site is that they incorporate, within a partially excavated substructure, different tomb types housing individuals or groups. They suggest a collective pantheon of the ancestors that also spatially distinguished between subgroup or individual identities. At Humanejos, nine Bell Beaker tombs were identified in the central part of the site, which were also characterized by diverse sizes and types.³⁵⁷ One of the hypogea (tumba 9) had been excavated to a depth of 3.4 m, and had steps leading down into it. Within its chamber were found fragmented human bones as well as an exceptional array of five Bell Beaker ceramics, including a rare stemmed/footed Beaker and a V-perforated button.

Marked distinctions between individuals is evident. At Camino de las Yeseras, some burials lacked goods, or had few goods, such as millstones and sherds; others, however, had valuables, such as Bell Beaker pottery, gold, ivory, and cinnabar.³⁵⁸ Beaker-associated burials also show that they were not always male.³⁵⁹ For example, Beaker ceramics were found in the double burial of a female and male at Humanejos, the double burial of two women at La Magdalena, and a female and child at Camino de las Yeseras. Also found at Camino de las Yeseras was a female buried individually holding a Bell Beaker vessel in her hand. At La Magdalena, there was another young woman accompanied with a plain vessel, a copper awl, and an ivory button. There are also individual females, such as at Humanejos, who were buried without the ceramics, but with other goods from the Beaker “package,” such as copper daggers.

Evidence for violence attests to some degree of conflict at this time, and dramatic signs of traumatic injuries were found at Camino de las Yeseras and Humanejos.³⁶⁰ For example, at Camino de las Yeseras, a group of individuals buried in a pit were found with flint arrowheads. One arrowhead was found close to the forearm of one of the individuals, and another antler arrowhead with an old broken tip and base was recovered close to the skeletons. The dating and association of these individuals suggest that they died together in a

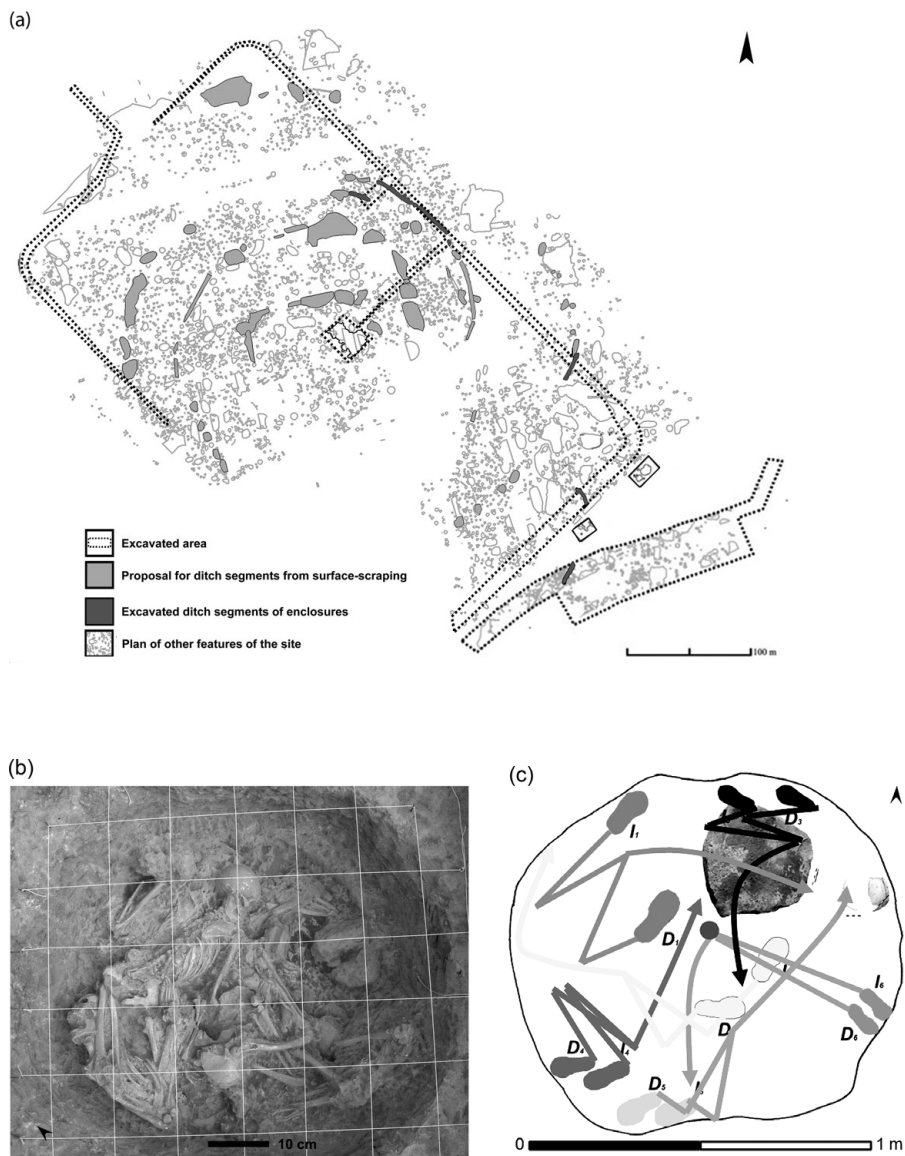


Figure 6.19 (a) Camino de las Yeseras, Plan; (b) Camino de las Yeseras; photo from excavation of a multiple burial of women in a pit, second half of third millennium BCE; (c) reconstruction of depositional sequence of the bodies, showing grinding stone at bottom and a vessel as grave goods.

From: (a) Argea Consultores S. L. and Ríos, Blasco, Liesau. (b) Argea Consultores, S. L. (c) Blasco and Ríos 2014

violent fashion. Also found was a male with broken nasal bones. At Humanejos, another male had traumatic injury to the frontal bone, suggesting a direct blow with an axe.



Less is known about the early second millennium cal BCE, known as the *Bronce Clásico* or *Bronce Pleno*.³⁶¹ The predominance of undecorated ceramics and the tendency of archaeologists to attribute undecorated ceramics to the Early Bronze Age makes it difficult to pin down the dates for this period (a problem associated with other regions of Iberia, as well).³⁶² In their form, ceramics are characterized by open carinated bowls, large jars with impressions and applied decorations, and handled jugs. Some forms are similar to those in the Argaric world, such as the low-carinated *tulipa* type. Lithic and metallurgical activities were similar to those in the northern Meseta, and, as in the north, interregional exchange networks collapsed by 1,900 cal BCE. The availability of copper ores in the Toledo Mountains made possible the local but small-scale production of copper goods, such as daggers, halberds, and awls.³⁶³ Bronze smelting only reached the Tagus Basin ca. 1,800 BCE, most likely from northeastern Iberia.³⁶⁴

In the middle Tagus Valley, the dead were inhumed, generally without grave goods, in pits and occasionally in large jars comparable to Argaric *pithoi*.³⁶⁵ One of these pit sites is Los Berrocales.³⁶⁶ Strontium isotope analyses of the individuals indicate that most were local, although a few (females) came from the Central System.³⁶⁷

In Toledo and Ciudad Real, upland sites were established,³⁶⁸ such as those in the old city of Toledo and Cerro del Bu.³⁶⁹ However, the hilltop settlement has probably been overemphasized as a Bronze Age site type as it is more likely a research artifact. For example, surveys in the Montes de Toledo identified seven hilltop and twenty-four low-lying sites.³⁷⁰

The Early Bronze Age of the region of La Mancha, while distinctive in many ways, shares material features with the *Bronce Valenciano* and Argaric world, such as defensive settlements, carinated ceramics, and riveted daggers.³⁷¹ There are also similarities with the Estremadura, such as large jars with appliqué and impressed decoration, copper tools and weapons (awls, barbed arrowheads, flat axes), and some exotic personal adornments,³⁷² which were likely the result of sporadic exchanges.

Early Bronze Age settlements of La Mancha are often conspicuous, although variable in form and size.³⁷³ The most distinctive is the *motilla*. *Motillas* are isolated stone-walled enclosures, which could be ringed by two to three walls and sometimes had a central tower. Modifications to their architecture and the occupational debris that accumulated over time created tell-like mounds, reaching 4–10 m in height.³⁷⁴ They are not particularly large in extent, unlike ditched enclosures; they range from 0.25 to 1 ha in area.³⁷⁵ Long known by antiquarians and believed to be burial mounds with cremations, *motillas* were first excavated in the 1970s and came to be recognized as a unique settlement type. Important sites include El Azuer (Figure 6.20), Los Romeros,³⁷⁶ and El



Figure 6.20 Motilla of El Azuer.

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Acequión.³⁷⁷ *Motillas* tend to be located at regular intervals – every 4–5 km – along waterways.³⁷⁸ In contrast to Early Bronze Age settlements in other parts of Iberia, *motillas* tend to be located on low-lying swampy ground close to underground aquifers where potable water was reachable but where briny marsh was avoided.³⁷⁹ At El Azuer, an ancient well was opened into the phreatic level and reaches over 20 m in depth.³⁸⁰ Geophysical surveys have identified similar shafts in other *motillas*.³⁸¹

Diverse activities took place at *motillas*. At El Azuer, cereal storage structures, ovens, and hearths were identified within the walls.³⁸² Outside the walls were houses, and this is considered to be the settlement area. Analyses of the fauna and botanical remains indicate that the inhabitants consumed primarily wheat and barley, as well as peas, vetches, beans and lentils. Of the animal domesticates, sheep/goat dominated, although cattle, horses, and pigs were also slaughtered.³⁸³ Beneath the floor of houses were sometimes found burials, although they are less common than in the southeast. Unlike Argaric graves, few grave goods accompanied the dead, regardless of their age or sex; some adults were given copper daggers or awls.

The establishment and abandonment of *motillas* have been linked to climatic oscillations at the time of the 4.2 ky BP event. Specifically, *motillas* and their wells may have been constructed to access and protect underground water during this period of aridity. However, as precipitation levels increased ca. 1,800 cal BCE, flooding would have posed challenges to these sites, and other locations would have been more favorable.³⁸⁴ Thus, beyond their defensive character, the thick walls at El Azuer might have served to prevent



Figure 6.21 Castillejo del Bonete.

Courtesy: L. Benítez de Lugo

flooding of the storage and workshop areas or as a structure to irrigate surrounding lands from the central tower.

Other site types include *poblados* (or *castillejos*), which can be large deeply stratified mounds or smaller and shallower mounds.³⁸⁵ They can also be quite small, covering an area of just a few hundred square meters. *Poblados* include Cerro Pelado,³⁸⁶ El Recuenco, Cerro de la Encantada,³⁸⁷ and El Quintanar.³⁸⁸ Cerro de la Encantada, dated to between 2,500 and 1,500 cal BCE, is situated on a promontory at an elevation of 790 m overlooking the Rio Jabalón Valley and important mountain passes. In addition to houses, defensive walls, and storage facilities, remains of an *altar de cuernos* (horn altar) were discovered. Individual burials were found in cists, pits, and pithoi in the settlement area and some beneath house floors. The similarity of these burial practices to those of the Argaric world have led some scholars, such as Lull, to consider La Encantada to be Argaric (and, thus, some Argaric maps have a finger-like extension from the southeast into the Meseta/Ciudad Real).³⁸⁹ Infant burials made up a relatively high proportion of the graves at La Encantada; 30 percent of the fifty individuals studied were children four years and younger.³⁹⁰

A new kind of site was recently identified in the region, but, unlike *motillas* and *poblados*, these sites seem to have been primarily related to ritual practices. Castillejo del Bonete is, to date, the only example of such a site (Figure 6.21). It is made up of monumental mounds connected by corridors. The main barrow (Tumulus 1) was built over a cave decorated with post-Paleolithic rock art. Human bones were found throughout the site, some as individual or double

graves in tombs (in anatomical position), others as secondary graves or dispersed throughout the site. Grave goods, including Beaker ceramics, copper Palmela points, and variscite beads, were placed with some of the dead. The main barrow is connected to other mounds by corridors, one of which was more than 20 m long. Although similar in overall form to a *motilla*, Castillejo del Bonete does not appear to provide access to an aquifer. Rather, it is a monumentalized space, which was visible from a distance, where the living and the dead interacted. The site has been dated to between 2,465 and 1,565 cal BCE.³⁹¹

Pit sites known as *campos de hoyos* (or *fondos de cabaña*) are also known, such as El Vicario.³⁹² They have not been as intensively studied owing to their low visibility.

The relationship between these different settlement types and the degree of social inequality they materialize are debated. Some argue for a functional relationship, in which the *poblados* were centers occupied by elites, *motillas* were primarily dedicated to the storage of cereals, and *campos de hoyo* were primarily agricultural sites.³⁹³ However, systematic surveys in Albacete, which identified over 200 Bronze Age sites and classified them by their size, found no significant differences in the surface finds among sites of different sizes that might support a functional differentiation between them. Furthermore, a comparison of their land use potential and population estimates for the sites indicate the largest of these sites could have been supported by locally available resources, and, therefore, it is difficult to argue for an exploitative relationship between them.³⁹⁴

SOME CONCLUSIONS

One of the most contentious debates in Iberian archaeology, entangled with the issue of classification, is the question of the State and the nature of social inequality during the third and second millennia cal BCE in southern Iberia. In essence, this debate pits two schools of thought. The first argues that communities who lived during the third or second millennia cal BCE were part of state-level class-based polities (with some advocating for the State during the third millennium BCE/Copper Age, and others for the second millennium BCE/Argaric). The definition of the State used by most Iberianist scholars is a political system in which a nonproducing class has coercive force to extract tribute from a productive class in the form of agriculture or valuables, such as metal goods. Based on his analyses of Argaric burials and associated grave goods, Lull argued that there were at least three social classes in evidence: a dominant, intermediate, and exploited class.³⁹⁵ Some, such as Gilman,³⁹⁶ support the evidence for a class society in the Argaric, but not the State. The second group of archaeologists argue that communities of the third and second millennia BCE were essentially kin-based, characterized by different kinds of

inequality (similar to tribes or chiefdoms), had a two-tier settlement hierarchy, and that there is no evidence for coercion. The key evidence (and interpretations of them) have been discussed in this chapter and [Chapter 5](#), so they will not be reviewed again here.

One way to consider this debate is to place it in its historical context. It emerged in the 1970s during a moment of important methodological, intellectual, and political changes. It was at this time that radiocarbon dating and its calibration made clear that the innovations of the third millennium BCE in Iberia – such as metallurgy, fortified settlements, and corbelled tombs – could no longer be seen as the outcome of “external” factors, such as colonization by peoples of the east Mediterranean, as the Iberian examples predated them. The radiocarbon revolution left an explanatory vacuum in its wake, and archaeologists had to turn to local economic, social, or environmental factors to make sense of the archaeological record. This “radiocarbon revolution” coincided with the emergence of processualism and Marxist archaeology (which in Spain was inspired by Latin American Social Archaeology), and their concerns with social evolution. In the Anglo-American community, this translated into research into the factors underpinning social inequality and the classification of ancient societies in evolutionary types. The 1970s were also a politically transformative period, as these were the decades following the fall of the Franco and Salazar dictatorships. Archaeological interest in these complex societies coincided with a time when the collective memories of the brutalities that the State could inflict on its citizens were still fresh. Over subsequent decades, the question of the state and the nature of social inequality during the third and second millennia BCE set research agendas and shaped discussions on a host of topics, such as metallurgy, violence, health, and diet. These discussions involved predominantly Spanish archaeologists, and not Portuguese archaeologists. In part, this may be explained by the fact that the best evidence for hierarchical societies, such as Los Millares and the Argaric sites, are in Spain.

As an intellectual trend, the state debate has been instrumental in moving research forward (at least in Spain), as it provided a hypothesis that could be tested archaeologically. In doing so, archaeologists have generated a wealth of data related to subsistence, technology, and demography. In recent years, however, there has been significant pushback.³⁹⁷ Charges of “complexity inflation”³⁹⁸ have been leveled. It could also be argued that classifying sites into evolutionary schema does nothing to explain them or to provide insight into the unique lived experiences of people. Like all taxonomies, they present a static picture of human collectivities and histories.

ENDNOTES

1 Harrison 1985.

2 Magny *et al.* 2009; Carrión *et al.* 2010; Hinz *et al.* 2012; Risch *et al.* 2015.

- 3 Castro Martínez *et al.* 2000; Fábregas Valcarce *et al.* 2003; Fabián García *et al.* 2006; Lillios *et al.* 2016; Blanco-González *et al.* 2018. Portions of this chapter draw from Blanco-González *et al.* (2018).
- 4 Cardoso 2014a, 2014/2015. This dogma has been questioned, however. One reason for the doubts is that these early dates come from settlements with pre-Beaker levels. None derive from a closed burial context (Jeunesse 2014; Rafael Garrido-Pena, personal communication, 2018).
- 5 Salanova 2005:13.
- 6 Indeed, when found in settlements, Beaker ceramics always make up less than 5 percent of the total assemblage (Garrido-Pena 2014).
- 7 Harrison 1980; Vander Linden 2007.
- 8 Garrido-Pena 2014.
- 9 Garrido-Pena and Muñoz López-Astilleros 2000. Beakers with this imagery are known as *campaniforme simbólico* in Spanish; there is no term in Portuguese (Cardoso, personal communication, 2018).
- 10 These are known as *estilo liso* in Spanish; there is no term in Portuguese (João Cardoso, personal communication 2018).
- 11 Delibes de Castro 1977; Garrido-Pena 2014.
- 12 Harrison 1980; Garrido-Pena 2000, 2014.
- 13 Liesau *et al.* 2015.
- 14 Martín Valls and Delibes de Castro 1989.
- 15 Blasco *et al.* 2009.
- 16 Ríos and Liesau 2011; Schuhmacher and Banerjee 2012; Liesau von Lettow-Vorbeck 2016.
- 17 Fitzpatrick 2011.
- 18 Zilhão 2016.
- 19 Garrido-Pena *et al.* 2011:122–124.
- 20 Garrido-Pena *et al.* 2005.
- 21 Blasco *et al.* 2007; Liesau von Lettow-Vorbeck 2017.
- 22 Gonçalves 1971:54–61.
- 23 Belchior da Cruz 1906.
- 24 Leisner *et al.* 1961. The site is located in the parish of Quinta do Anjo and the municipality of Palmela, and these toponyms are also used to refer to the site. The name Palmela, however, was given to the Beakers and copper points, and they continue to be known in this way.
- 25 Riaño *et al.* 1894; Blasco 1994; Blasco *et al.* 1998.
- 26 Riaño *et al.* 1894:437.
- 27 Antón Ferrándiz 1897; Deselaers 1917.
- 28 Schmidt 1913.
- 29 Jeunesse 2014.
- 30 Bosch-Gimpera 1926, 1940.
- 31 del Castillo Yurrita 1928; Díaz-Andreu García 2009; Garrido-Pena 2014.

- 32 Childe 1950:76.
- 33 Sangmeister 1957, 1963, 1964, 1976.
- 34 Lanting and van der Waals 1976.
- 35 Harrison 1977, 1980.
- 36 Sangmeister 1976; Sangmeister and Schubart 1981; Kunst 1987.
- 37 Garrido-Pena 2014.
- 38 Clarke 1976:160.
- 39 Burgess and Shennan 1976.
- 40 Sherratt 1987.
- 41 Salanova *et al.* 2016.
- 42 Kunst 1995.
- 43 de Carvalho Amaro 2010/2011, 2013a.
- 44 Millán and Arribas 1994.
- 45 Guerra-Doce 2006, 2014; Rojo-Guerra *et al.* 2006b, 2008; Delibes de Castro *et al.* 2009.
- 46 Bueno Ramírez *et al.* 2005b.
- 47 Trancho and Robledo 2011.
- 48 Olalde *et al.* 2018a.
- 49 Olalde *et al.* 2018b.
- 50 Harrison 1980.
- 51 Waldren 1997.
- 52 Tarradell Mateu 1957–1958.
- 53 Harrison and Gilman 1977; Bokbot 2005.
- 54 Guerra-Doce 2016, 2017.
- 55 Blasco 1994.
- 56 Bettencourt 2011.
- 57 Criado Boado *et al.* 1991; Criado Boado and Cabrejas Domínguez 2005; Prieto Martínez and Criado Boado 2010.
- 58 Blanco-González *et al.* 2018. Prieto Martínez (and others) argue that the Beaker period should be designated as Early Bronze Age, as it marks a rupture from the earlier third millennium cal BCE. This earlier period is designated Late Neolithic, rather than Chalcolithic, given the continuities observed (Prieto Martínez *et al.* 2012).
- 59 de Jesus Sanches 1997; Prieto Martínez 2011a, 2011b; Prieto Martínez and Salanova 2011.
- 60 de Blas Cortina and Rodríguez del Cueto 2015.
- 61 Ontañón Peredo 2003.
- 62 Alday-Ruiz 1995, 1996; Armendáriz Gutiérrez 1997.
- 63 Sanches *et al.* 2017.
- 64 de Jesus Sanches 1997.
- 65 Prieto Martínez and Lantes Suárez 2017.
- 66 Aboal Fernández *et al.* 2005; Tabarés Domínguez and Prieto Martínez 2005.

- 67 Gorrotxategi *et al.* 1999; Sesma *et al.* 2009.
- 68 Parcero Oubiña 1997; Criado Boado *et al.* 2000:75; Prieto Martínez 2011b.
- 69 Bettencourt 2011.
- 70 Prieto Martínez 2011a.
- 71 Ontañón Peredo 2002b:114.
- 72 Alday-Ruiz 1995:163.
- 73 Bettencourt 2011.
- 74 Valera 2017b.
- 75 Bettencourt 2011:372.
- 76 Rodríguez Casal 1982.
- 77 Mujika Alustiza and Armendáriz Gutiérrez 1991:134.
- 78 Prieto Martínez and Salanova 2011; Prieto Martínez *et al.* 2015; Prieto Martínez and Lantes Suárez 2017.
- 79 Prieto Martínez and Salanova 2009.
- 80 Fábregas Valcarce and Ruiz-Gálvez Priego 1997, 1998; Martín-Seijo *et al.* 2015, 2017.
- 81 Kaal *et al.* 2013.
- 82 Martín-Seijo *et al.* 2015, 2017.
- 83 Vieira 2014.
- 84 Cardoso 2014a.
- 85 Rovira 2002:9; Vieira 2014:55.
- 86 de Jesus Sanches 1992, 1997.
- 87 Senna-Martinez *et al.* 2011.
- 88 Valera 2006:97–100.
- 89 de Jesus Sanches 1997:227–231.
- 90 Carvalho 2004.
- 91 Nonat *et al.* 2015.
- 92 Prieto Martínez and Salanova 2011.
- 93 Comendador *et al.* 2014a.
- 94 Comendador 1999; Rovira 2002.
- 95 Comendador *et al.* 2014b.
- 96 Senna-Martinez *et al.* 2010.
- 97 Bettencourt 2009:12–13.
- 98 Zapata Peña *et al.* 1995.
- 99 Fábregas Valcarce 1998, 2010:120–123; Comendador 1999; Ruiz-Gálvez Priego 2014; Prieto Martínez 2017.
- 100 Martín-Seijo *et al.* 2017.
- 101 López Costas *et al.* 2015.
- 102 de Blas Cortina 2014.
- 103 Arias Cabal and Ontañón Peredo 1999.
- 104 Fábregas Valcarce and Ruiz-Gálvez Priego 1998; Ontañón Peredo 2003, 2013; Díaz-Guardamino 2010, 2014; Ruiz-Gálvez Priego 2014. Their

- iconography is also found on rock art, such as Outeiro do Corno (A Coruña) (Fábregas Valcarce *et al.* 2004).
- 105 Senna-Martínez 2009.
- 106 Díaz-Guardamino 2010.
- 107 Lull *et al.* 2013a:607; Mataloto *et al.* 2013; Valera 2014b, 2015a; Balsera *et al.* 2015a:fig. 4; Lillios *et al.* 2016.
- 108 Sangmeister and Schubart 1981:249–251.
- 109 Leisner and Leisner 1955; Mataloto 2007.
- 110 Kunst 2001.
- 111 Lazarich González 2000.
- 112 Schubart 1971, 1975.
- 113 Soares 2008.
- 114 Cardoso and Gradim 2003.
- 115 Although see de Carvalho Amaro 2010/2011.
- 116 Cardoso and Martins 2018.
- 117 Harrison 1980:130; Soares *et al.* 2017.
- 118 Harrison 1985.
- 119 Cardoso and Detry 2001/2002.
- 120 Kunst 1987; 2017.
- 121 Cardoso 2014a, 2014b.
- 122 Valera and Basílio 2017.
- 123 Cardoso 2014/2015.
- 124 Kunst 1987, 1996.
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CHAPTER 7

ARCHAEOLOGIES AND HISTORIES OF THE IBERIAN PAST

This book tells three kinds of stories about the Iberian past. One focuses on the work of archaeologists and their collaborators – their discoveries, analyses, debates, and struggles to preserve sites. The second recounts the material traces of ancient Iberian peoples, and our current understandings of their lives and practices. A third explores the relationship between the Iberian archaeological past and Spanish and Portuguese societies. As I have tried to demonstrate in this book, these stories are intimately entangled. In this final chapter, I explore key topics and productive tensions that I see in these stories. I offer some thoughts and pose a series of questions, which may be useful in provoking future research programs.

ARCHAEOLOGIES OF MOBILITY

One recurrent theme in Iberian archaeology is mobility – the journeys of people and objects along river valleys, across mountain ranges, along the coast, and over the waters that separate Iberia from other land masses. Identifying the presence of local and nonlocal individuals and goods and determining the role of local or exogenous factors in driving social change are key questions that have engaged archaeological research in Iberia since the nineteenth century. Recent application of strontium isotope analyses, genetics, and raw material characterization studies have shed new light onto these important questions, which include:

- How much demographic mobility was involved with the spread of farming to the Iberian Peninsula?
- What was the nature of the interactions between people in the Iberian Peninsula and North Africa during the third and second millennia BCE?
- Did Beaker ceramics have their origins in the Iberian Peninsula and spread to Western Europe, and were population movements involved in their spread?
- Where are the sources for rare materials that ancient Iberians used, such as amber, gold, variscite, and copper?

These are all important topics and questions, given that the biographies of people and objects, and their places of origin, shape their identities and the ways they are perceived and engaged with. Drawing on ethnographic and ethnohistoric accounts, Mary Helms argued that goods that derive from distant places derived cosmological potency from that distance, conferring political power to those individuals who come in contact with them.¹ This thesis has shaped – directly or indirectly – much archaeological thinking on the long-distance movement of goods.

However, there are other fundamental questions also worthy of further exploration. For example, how was locality and nonlocality understood in the Iberian past, and how did these understandings vary by place and over time? As biological sex is distinctive from socially constructed gender, there is no necessary equivalence between biological or geological origins and social identity. One cannot presume that an individual raised in a different geological landscape than the one in which they were buried was considered an “other.” This is particularly the case in geologically heterogeneous landscapes, such as southern Iberia and the Iberian Pyrite Belt, the Sierra Morena, and Sierra Betica. There, different lithologies may be found within a few hours walk. By the same token, there is no reason to assume that people who originated from the same geological zone or who are all isotopically local saw each other as kindred spirits. Identity and alterity are outcomes of social engagements and interactions, which often related to competition. Recent isotopic studies from the Copper Age mega-site of Marroquíes Bajos illustrate this point: although 8 percent of the 115 individuals sampled had nonlocal isotopic signatures, their mortuary treatment was indistinguishable from that of locals.²

It would also be productive to examine the assumptions that underpin the language used to denote peoples and goods that traveled. Many terms, such as migrant, immigrant, or trade good, presume a kind of agency with respect to mobility that may not be warranted. In his consideration of the politics of mobility and migration, or *kinopolitics*, philosopher Thomas Nail suggested that everything (and everyone) moves to some degree. The important questions are how, when, why, with whom, and with what.³ Did people move with their animals, did they travel by boat or foot? Were they fleeing violence? Were objects circulated through socially endorsed exchanges, or were they looted or trafficked through socially unsanctioned means? Did women, men, and children travel together or separately? Embedded in terms like “mobility” when applied to people or objects is also often a kind of middle-class Western ontology, a world in which free will dominates and can be exercised. However, not all people move (or stay put) as the result of intentional or willing actions. The forced and directed migration of millions of Syrians and Afghans into Europe, the trafficking of millions of enslaved Africans during the Atlantic slave trade, and conditions of human trafficking that continue to this day are sobering reminders of this flawed assumption. Individuals, particularly

children, also run away for various reasons, but often to escape a violent domestic setting. Similarly, individuals may not be able to move because of social, political, or economic reasons, or because their mobility is constrained by disability. With respect to objects, looting and theft must have accounted for the mobility of certain goods, particularly valuables. Patrick Geary's study of the trade and theft of human relics in the Middle Ages of Europe provides an illuminating window into such behavior.⁴ It is plausible that, during the late Neolithic, some of the cranial relics as well as curated and re-engraved plaque fragments found in tombs were the consequence of such "unfair trades." Even animals can be stolen from or escape from the clutches of their owners. Domesticates can become feral. How can we identify cases of these alternative mobilities as archaeologists?

TAXONOMIES

A second theme in the study of the Iberian past revolves around classification, and what constitutes significant differences or similarities between analytical entities. This concern has impacted all levels of analysis, including the formal study of artifacts and sites, the temporal ordering of cultural phases, the spatial delimitation of cultural areas, and the classification of sites or cultural phenomena into social formations (such as State versus non-State). At its heart, archaeological theory is about these critical questions. For example, what are the meaningful differences between the site types of the third millennium cal BCE, such as monumentalized sites, fortified settlements, and ditched enclosures? Is the traditional dichotomization of settlement versus burial a useful one for all times and places? Is it even appropriate to call a place like Valencina de la Concepción a site (or even a mega-site), when there are so many different kinds of activities and practices apparent over this vast area, extending over 450 ha? Are our conceptions of urbanism as well as social formations too reliant on Western models or on postcontact ethnographic studies? If current site typologies seem unproductive, perhaps different analytical scales should be explored, specifically ones that focus on practice. Artifact typologies also need to be scrutinized, especially given that multiple functions may be associated with certain types (i.e., lithics). For example, what does it really tell us to call a Beaker a Ciempozuelos, Maritime, or Palmela type? What kinds of assumptions are implied in naming a Beaker pot by its type? With respect to chronologies, should we continue using terms (or having debates over terms), such as late Neolithic/Chalcolithic and Epipaleolithic/Mesolithic? What do we gain by calling a site Argaric? And, what is obscured? Is it relevant to speak about Andalucía or Galicia or the Portuguese Estremadura for the ancient past? Can we identify cultural cores or peripheries? How well do contemporary geopolitical or environmental zones correlate with cultural patterning at different times? Might we begin to explore notions of cognitive maps? How

much have contemporary polities and administrative units shaped our understandings of the past?

While creating taxonomies is essential to ordering knowledge and making comparisons for specific questions to be asked, they need to be critically examined on a regular basis. Taxonomies tend to reify experience and create the illusion of stability and boundedness. In archaeological settings, they discourage explorations of the biographies of sites and objects, or their dynamic and palimpsest qualities. Taxonomies promote the creation of intellectual silos. They encourage a practice of discounting or ignoring exceptions or deviations from the “norm.” They also encourage a focus on origins and “firsts.” As historian Marc Bloch noted, an obsession with origins is the “idol of the historian tribe.”⁵ Bloch queried what it means to find the “origins” of an important phenomenon, as the term is ambiguous unless it helps us understand a causal relationship that led to that particular development. Rather than seeking the earliest evidence for farming, collective burials, metallurgy, or Beakers, it would perhaps be more productive to focus efforts on the factors that lead to such early practices, for example, and why they didn’t develop elsewhere.

BEYOND THE STATE

One way to inject dynamism into our understandings of the third and second millennia BCE (and other time periods) would be to explore the tensions between structure and agency, and different kinds of practice. Even the most powerful states had spaces where resistance was expressed or contradictory social practices were at play.⁶ Can we identify and analyze evidence for both collective action/cooperation and exclusionary practices?⁷ A second tactic would be to investigate the role of interregional demographic shifts – within the peninsula – as outcomes and triggers or social changes. The growing data on human mobility and ancestry provide a foundation for approaching this question. A third approach would be to focus research on household archaeology to discern whether differentiation existed between households. Another would be to explore how the physical spaces that people created for themselves and their dead shaped their own subsequent actions and interactions. Drawing from theories of structuration, how did they shift between the Neolithic and Chalcolithic, with collective tombs that can be viewed, at least from the outside, by a large group, to the Argaric, with its intramural burials? Finally, greater attention to nonelite practices, modest graves, and smaller settlements would contribute to a more nuanced understanding of the social landscape of the Copper and Bronze Ages. For example, is there anything distinctive about the isotopic signatures of those Argaric burials without grave goods or with only pottery or a single metal good, which have been interpreted as individuals from the exploited classes, foreigners, or slaves?⁸

MEMORIES, LANDSCAPES, AND HISTORIES

The vast temporal scope of this book – spanning over one million years – allows one to explore deeper structural patterns in Iberian history. With this deep-time perspective, it becomes clear that certain places and landscapes were foci of human activities for extended periods of time, although not necessarily continuously. These places, repeatedly revisited and modified, or referenced through architectural citation, accrued what I have called mnemonic density.⁹ These mnemonically dense places include the Sierra de Atapuerca, Monte Castillo, the Côa Valley, Escoural, and Antequera. They are generally characterized by unusual or distinctive mountains or geological features. Escoural is a rare limestone cave in a granitic landscape. Monte Castillo is a conical mountain. Antequera features the dramatic Peña de los Enamorados, which looks like the profile of a human face. Ancient peoples were often drawn to unusual features in the landscape to situate their sacred spaces or house their dead.¹⁰ Although encompassing a shorter time scale, many megalithic tombs and caves themselves were mnemonically dense places, revisited for burials over thousands of years. These places were sites of iterative encounters with the past – the people and their material. How did these iterative encounters shape the memories and practices of individuals and groups? The distinctive similarities between the geometric imagery of the engraved stone plaques and Bell Beakers found in these same tombs are striking. Perhaps more compelling examples are the bilobed vessels first produced in the Early Neolithic of eastern Iberia, and then again during the Early Bronze Age. They do not seem to be found anywhere else in the Iberian Peninsula. How did encounters with these older and distinctive-shaped vessels shape the lives and behaviors of later groups? Even if one is uncomfortable with the kind of object agency proposed by Gell,¹¹ the presence of unusual and old objects very likely provided creative fodder for artists and potentially symbolic capital for groups interested in legitimating their existence through ancestral connections.

VIOLENCE

The deep-time perspective of this book permits us to consider other questions of critical social relevance, such as violence. Where and when does violence appear in Iberian prehistory? Are there patterns? What is striking is that evidence for overt violence is relatively rare in Iberian prehistory. This, does not mean that there were not other forms of it that did not leave marks on bodies or that life was always conflict-free. The defensive location of many Copper and Bronze Age settlements, or their fortified architecture, certainly suggest a social landscape rife with tensions. What is, however, curious is that the few cases of large-scale violence – such as San Juan ante Portam Latinam and Longar – are in regions (the northern Meseta/Basque area) where high

levels of social inequality are not indicated. Mass graves such as these sites are notably lacking in regions where the state or high levels of social inequality have been proposed, such as the Iberian southwest during the third millennium BCE and the Iberian southeast in the early second millennium BCE. This does not mean that these models are incorrect, but it does suggest that archaeologists need to develop more sophisticated understandings of how violence, inequality, and exploitation are manifested, both through physical conflict and more structural or ideological practices.

GENDER, AGE, AND POWER

Through the rich burial record of the Iberian Peninsula, we can explore the relationship between gender and power, while recognizing that burials are not uniformly available due to conditions of preservation. With this panoramic perspective, it is striking how many special burials are those of young people or females. For the Paleolithic, there is the Lapedo child and the Red Lady of El Mirón. For the Mesolithic, there is the older female buried with three Asturian picks from Molino de Gasparin. For the Early Neolithic, there is the adult female at Ca l'Oliaire, with eighteen shell bracelets and hundreds of beads. Particularly spectacular is the late Neolithic tomb of Montelirio, where twenty females were housed in the chamber with a million beads, over 200 arrowheads, and ivory. In the late Copper Age/Beaker period, there is the young female buried with a bovid at La Vital, and the wealthy female burials of La Magdalena and Camino de las Yeseras, Humanejos, and a female and a child at Camino de las Yeseras. From the Early Bronze Age, there is the burial of the thirteen- to fourteen-year-old girl at Santioste, with silver beads and an ivory button. Sometimes wealthy females are found with males, such as at the Argaric site of Almoloya. That is not to say that there are no examples of special adult male burials. From the Mesolithic, there are the burials of Los Azules and J3. From the Beaker period, there is the seventeen- to eighteen-year-old male at Fuente Olmedo, who was wearing a gold diadem on his head and found with eleven Palmela points, among other goods, and the Beaker male from Camino de las Yeseras, also with a gold diadem.

We can interpret this mortuary record in a number of ways:

- (1) Graves are unrepresentative and meaningless as indicators of status or power.
- (2) Different ritual practices occurred at different times in the Iberian past. Lavish goods were given to high-status individuals at some times or under certain conditions, while at other times or in different cultural contexts, they were material expressions of profound grief at an untimely or bad death or an idealized identity.

- (3) Women, men, and children had the potential for achieving high status or being ascribed as high-status individuals throughout the Iberian past.

Each of these statements represents a hypothesis that could be investigated productively.

THE FUTURE OF IBERIAN ARCHAEOLOGY

In closing, I offer a few thoughts about the future of Iberian archaeology.¹²

It is likely that funding for archaeological research in Spain and Portugal will be increasingly competitive and pressure will intensify to demonstrate the relevance of this research to the public and academic communities in addressing importance questions of international – not only regional or national – concerns, such as climate and environmental change, demographic shifts/mobility, inequality, and conflict. This research will require teams of interdisciplinary and international specialists to collaborate and productively engage with scholarly communities and the public through traditional academic venues as well as social media. The archaeology of late prehistoric Iberia has, fortunately, ample material that speaks to these issues. Community-based archaeology could also be a productive avenue to pursue, as it brings archaeologists and stakeholders together in collaborative and mutually beneficial projects.

Given increasing constraints on funding, it also seems important to shift away from major excavations and the excavation of large sites toward the analysis of objects (and human remains) already excavated and housed in museum storerooms. Countless objects remain unanalyzed, and important sites remain not fully published. In many ways, the stories that individual objects tell can be more illuminating and more compelling than the stories generated by the excavation of a site, given their intimate connections with individual people's lives; witness the popularity of the British Museum's podcast *History of the World in 100 Objects*. The emphasis on excavation may be a consequence of what is perceived by funding agencies as important research, and, if so, archaeologists may need to make a stronger case for the importance of collections or object analysis. One way to match museum collections with researchers might be for curators to disseminate ideas for possible research projects based on their museum's holding via a website. It might also be productive to develop archaeological projects that require lower levels of funding. These could include systematic surveys of river valleys, with more explicit sampling strategies, and excavations of small sites. Smaller sites can provide key information related to economic and social hierarchies, and they can be more completely excavated and analyzed in shorter periods of time, ensuring more timely dissemination.

The development of regional approaches to the landscape has been a productive direction in Iberian archaeology. However, contemporary political

entities, such as autonomous communities, do not correspond with ancient political realities. Therefore, it is critical to ensure that research engages across contemporary political or national borders and to find ways to incentivize this research, since it involves dealing with more layers of bureaucracy.

Another fruitful direction would be the creation of central digital repositories to house and disseminate geochemical and photographic information. One consequence of the explosion of new scientific techniques is the production of large data sets, which can be difficult to share and compare. Unlike radiocarbon dates, the results of these studies remain highly dispersed, and the possibility that archaeologists are duplicating efforts in characterizing source materials is high.¹³

To conclude, Iberian archaeology has provided a rich record of human creativity, resilience, and cultural transformation. Given the vitality of archaeological research in Portugal and Spain, many of the interpretations and conclusions presented in this book will, no doubt, be revised over time. Nevertheless, it is my hope that it has provided a helpful synthesis of the state of the field and a framework for developing directions for future research.

ENDNOTES

- 1 Helms 1993.
- 2 Díaz-Zorita Bonilla *et al.* 2018.
- 3 Nail 2015.
- 4 Geary 2011.
- 5 Bloch 1992:24.
- 6 Scott 1992.
- 7 Blanton *et al.* 1996; Carballo *et al.* 2014.
- 8 Lull *et al.* 2011:400–401.
- 9 Lillios 2015.
- 10 Tilley 1994; Bradley 2000.
- 11 Gell 1998.
- 12 Excerpts of this section have been published in Lillios (2018).
- 13 Preliminary efforts to create isotope databases can be found at www.idearqueologia.org and <https://isomemo.com>.

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